# A Course of Lectures
ON THE
# STRUCTURE AND DEVELOPMENT
OF THE
# VERTEBRATE SKELETON.

*Recently delivered at the Royal College of Surgeons of England*

BY PROFESSOR HUXLEY, F.R.S.

## LECTURE XII.

MR. PRESIDENT AND GENTLEMEN,—One of the earliest propositions which I have endeavoured to establish, and that on which I have largely dilated upon various occasions, was an embryological one, or rather, a series of embryological ones. I pointed out to you that the skull in all cases in the vertebrate series arose as a result of the modification of the anterior part of that groove the posterior part of which becomes eventually converted into the vertebral column. I further pointed out that for a very short time the characters of this anterior division of the groove and of the posterior division of the groove are similar, and that the very earliest changes which they undergo are alike—that is to say, that the lateral edges of the continuous groove, both in its cephalic and its spinal portion, rise up into walls, and these walls eventually unite over the upper part of the cavity, and thus include that long canal which we know as the spino-cerebral canal. But at a very early period indeed we have also pointed out that the primitive identity between the cephalic portion and the vertebral, or more spinal portion of the primitive groove, and of that canal formed by its modification, entirely ceases, and from that time forward each undergoes a separate series of modifications, by which the one becomes converted into the vertebral column, and the other becomes converted into the skull proper. In the skull the walls and the floor exhibit no modification or differentiation into those structures which we call proto-vertebræ. In the embryonic skull of vertebrates the notochord has never yet been seen to extend beyond the middle of the base of the floor, and furthermore when chondrification takes place—when the secondary cartilaginous skeleton comes to be formed within the membranous one, that chondrification takes place as a continuous mass extending upon each side of the base of the notochord, continuing forward into the two trabeculæ cranii, and these two trabeculæ unite at length in front into the ethmo-vomerine partition; so that the cartilaginous cranium of every vertebrate animal whatsoever, whether of the perch, or the snake, or the fish, or the bird, or the mammal, at all times in one stage of its existence presents a like figure. Those are very definite and distinct characters. Contrast these now with that which happens in that part of the primitive groove which will eventually be converted into the spinal column. The walls and the floor of the whole spinal column become differentiated into those quadrate masses on each side which we call the proto-vertebræ, and which will become converted, as I pointed out, partly into a portion of the dorsal muscles, partly into one of the ganglia of the spinal nerves, and partly into the cartilaginous foundation of the body of the vertebral arch; so that in consequence of this process, the whole of the spinal region of the primitive groove becomes divided into a series of segments, no trace of which makes its appearance in the floor of the skull. In the next place the notochord extends throughout the whole length of the spinal column, has no such stoppage or interruption as it has in the skull; and then when chondrification takes place, as I have already stated, the cartilage is deposited in separate masses, which are the rudiments of the bodies and of the arches of the vertebræ, and these are separated by definite portions of substance, which remains more or less fibrous or membranous, and which eventually constitutes the inter-vertebral cartilages and inter-vertebral ligaments. So that at a very early condition—and this change you must understand takes place within the second day of incubation in the chick,—at one of the very earliest periods after the first changes, you find that there is an entire and absolute difference in structure between the cranium and the vertebral column, and that the vertebral column is no more a modification of the cranium than the cranium is a modification of the vertebral column; but there is, as we know, a relation which we are so familiar with in zoology. It is not the case of one being a modification of the other, but the two have started from a common ground, the common ground of the primitive groove, the skull going off on its own special skull-pattern, the spinal column going off upon its special vertebral pattern. I consider that in the present state of our knowledge, (and there is no indication that we are likely to have any new lights of great importance upon this subject; it has been very carefully worked over and largely elaborated, and everyone may verify the facts for himself,)—I say, I regard this as one of the best established series of propositions in anatomy; and it appears to me if they be well established, there is an end to the whole of the vertebral theory of the skull. Whatever may be the analogies, whatever the resemblances of the segments of the skull to the segments of the vertebral column, you have here the irrefragable fact, that the development of the two is absolutely and totally distinct, and that the skull is not composed of a series of vertebræ, because it never consisted of a series of vertebræ.

I have, then, endeavoured to point out that, having assumed its special characters, the skull of vertebrates passes through three several conditions—the first condition being a membranous one, the second a cartilaginous, and the third an osseous; that these conditions always succeed each other in this order; that the membranous skull has a certain definite character, having the notochord in the hinder part of its base, and so forth, undergoing that flexure downwards which we call the cranial flexure; that the cartilaginous cranium has at first always these characters, which I have pointed out in so many forms of vertebrates; and that in the osseous skull the modification is produced by the deposition of osseous matter partly within the cartilage of the skull, partly within that which persists of the membrane of the skull; so that you will observe that no one of these conditions ever absolutely disappears. In the osseous skull there is a certain amount of the membranous skull and a certain amount of the cartilaginous skull left; in the cartilaginous skull there is a large amount of the membranous skull left; and different groups of vertebrates, as I pointed out to you, vary exceedingly in the extent to which the remainder of these earlier conditions exists. For example, in the pike we found a prodigious quantity of the cartilaginous cranium left, and that it increased from its primitive dimensions; whereas in the carp or perch we should find next to none. Then I endeavoured to show that the modifications of the skull which are observed among the vertebrata are all of them referable to modifications of one or other of these conditions of the skull of the higher vertebrata—that is to say, all the skulls of the vertebrata are constructed either upon the type of the membranous skull, or upon the type of the cartilaginous skull, or upon the type of the osseous skull; the variations in the type of the osseous skull lying between the two extremes of the osseous fish and man. There was only one example of the purely membranous skull, which was that of the amphioxus. Of the purely cartilaginous skull (whether it had superficial incrustations or not was of no great consequence for our purpose) we had many examples in sharks and rays and the chimæra. Then there was an interesting series of skulls which connected these with the osseous, such skulls as that of the sturgeon, which have a complete cartilaginous basis without any osseous matter in it at all, but which are provided with definite cranial bones formed within membrane. And then, by means of these and of the lepido-siren, we passed on to the osseous skull, formed by the deposition of bony matter partly within primitive cartilage, partly within membrane which covers the exterior cartilage itself.

Again, in studying the development of the skull, we found that throughout the vertebrate series always—with the excep-

tion of that remarkable fish, the amphioxus, which is such an exception to all doctrines and all theories—three sets of sensory organs are developed in connexion with the skull: the anterior ones, the olfactory; the two middle ones, the eyes; and the posterior ones, the ears. And all these have been definitely shown by the study of development to be originally produced as involutions of the integument, which in the case of the nose remain open, and in the case of the eyes become shut, and wonderfully modified internally to adapt them to their ultimate functions. Furthermore, upon the under surface of the cranium we have found that in all vertebrate animals there arose certain processes or inferior arches—three of them at least in pairs, if not four: the processes which we call the maxillary processes, the mandibular arches, and the hyoidean arches (I left it open whether more of these visceral arches might not belong to the skull proper); and besides these there were always developed in the middle line of the median process what we call the naso-frontal process, which had in its interior the prolongation forward of the trabeculæ cranii, in front of the wall of the skull; and in contact with these two little processes there arose eventually the pre-maxillæ. These characters were common to all the crania of vertebrates, so far as they have been examined. Consequently I hold it to be demonstrable that the walls of the olfactory capsules, and those bones which are directly developed within them, are primitively quite distinct from the walls of the skull proper. It is furthermore demonstrable that the pre-maxillæ are primitively quite distinct from those arches or parts of the cranium which give rise to the maxillary bones. It is again perfectly obvious that the mandible is, from its very first origin, part of an arch which is attached immediately in front of the auditory capsule, and that the hyoidean arch is part of an inferior process which is originally attached immediately behind the auditory capsule; and all the theories of the nature of these parts of the skull which are in contravention of these plain facts of embryology appear to me to be *ipso facto* negatived. It is of no use to say that the hyoidean arch or the mandible may be an appendage of the frontal segment if you know that it is not—if you know by the study of development that it arose in no such way. So, again, in every vertebrate cranium in which the nerves can be identified (I use this phrase because it is very difficult indeed to identify the nerves in the amphioxus; that is the only difficulty we have): in all these cases these nerves have from the very first perfectly clear and definite relations to the sensory capsules, and these relations are never lost or altered in any way whatsoever; so that the exits of the nerves serve as permanent landmarks by means of which you can identify the various bones of the skull. The olfactory nerves always pass out through the anterior walls of the skull upon each side of the middle line; the second pair of nerves always pass out in front of the fifth, and behind the first, and always go to the eyeballs; the third division of the fifth always passes out immediately in front of the auditory capsule, and is never known to have any other position in any condition of life; the seventh, the portio mollis, always passes out into the auditory capsule; and the eighth always passes out behind the auditory capsule. These are the relations which these nerves have in the embryo before any bones are formed; and, as bones are secondary products, we may always just in the same way make use of the nerves in identifying the bones as we may make use of the landmarks in a man's estate in identifying his fields as apart from those of his neighbours.

Well, then, when we came to apply these tests, these definite criteria—which could invariably be applied in practice, but have very little speculation about them—to the study of the series of osseous skulls, from the fish up to man—we found that there was a most extraordinary correspondence and unity of plan running throughout the whole. There were certain bones which you could always identify without the slightest difficulty where those bones were developed at all: for example, there has never been the slightest difficulty among anatomists in identifying the basi-occipital and its side and upper elements. There was no difficulty by these tests, in the whole of the series from the pike up to man, in identifying the basi-sphenoid and the two ali-sphenoids which are connected with it; nor was there any difficulty whatsoever about the definitions which applied to the pike applying to man and all the intermediate vertebrates. There was never any difficulty in identifying the pre-sphenoid and the orbito-sphenoids, nor was there any practical difficulty in identifying the upper roof-bones of the skull, the pre-frontals, the parietals, and the supra-occipital. As to all these, we were always perfectly able to identify them by their having the same essential connexions from the pike to the man as they had in either of these.

The same method applied to the walls of the skull threw the most remarkable light upon the composition of the capsule of the organ of hearing, verifying in the most striking manner that singular intuition (if I may so call it) of Oken's, that it is to be regarded as something as it were put into the wall of the skull, and not forming any portion of its lateral arches. We found that in the fœtal man there were three ossifications: one in front of the organ of hearing; one above it; one behind it: those ossifications which we called the prootic, the epiotic, and the opisthotic; all of these having certain definite relations to the internal organ of hearing and to the eighth nerve and to the fifth. Turning to the pike, we found that there were three ossifications having exactly and precisely the same relations, so that the definitions which applied to the ossification in man applied to the separate cranial bones of the pike; nor was there a single vertebrate animal, whether amphibian, reptile, or bird, in which, by examining at the proper period of development, we could not identify certainly two, if not the three, of these ossifications. In the whole of the reptilia and the birds it is perfectly easy to identify all three occupying exactly the same position as they have in man, exactly the same position as they have in the fish. Then, again, we found that by the same methods of study we were always able to identify the pre-frontals as being parts which have somewhat the same relation to the organ of smell as the bones of the periotic capsule have to the organ of hearing. And we found, further, that they had a very constant relation to the nasal division of the fifth. We were enabled to identify in this way the pre-frontal with the lateral masses of the ethmoid in the mammalia. And so with the other bones. I pointed out even additional bones—those bones which are not so immediately and inherently constituents of the skull as those which I have just mentioned—that even those were capable of being identified by similar methods. We found these basilar ossifications—the basi-temporal, as we call it in birds—very constant; formed within the perichondrial membrane outside the primitive cartilage, although below the basi-sphenoid. We found the vomer always occupying a similar position, so that no one has any difficulty in identifying the vomer of man with that of the pike, nor in any of the intermediate stages. And, what was still more remarkable, and still less to be expected, we discovered that even the mode of development of the bones, whether from cartilage or from membrane, remained singularly constant. I do not say absolutely constant, for it is very rare to find any rule in nature absolutely constant; but there was a most singular fundamental constancy in the development of the bones in the vertebrate series, so that finding in the skull of the pike the basi-occipital, the ex-occipitals, the supra occipitals, the basi-sphenoid, the pre sphenoid, the ali-sphenoids, and the orbito-sphenoids all developed from cartilage, when we turned to the man's skull, and when we turned to the intermediate vertebrata, we found these very same bones also the result of the immediate ossification of the cartilaginous primitive cranium. And in the pike finding the parietals, and frontals, and nasals, and the vomer were bones formed within membrane, turning our eyes from the pike to other vertebrates, and working our way steadily through the whole series up to man, we found everywhere that these same bones were developed, not in cartilage, but in membrane. So that with regard to the attachment of the inferior arches, we had no difficulty in identifying the pre-maxilla, or the palato-pterygoid arch; the pre-maxilla being connected with the anterior division of the skull, and the palatine arch being always connected with the second or frontal division of the skull (Fig. 72, *Fr*, *Pl*); the quadrate arch—that which supports the lower jaw—being always attached in front of the otic capsule (*Pro*, *op*, *Ep*); and the hyoidean arch being always attached behind it (*Hy*). So that we may say, if we choose to use these terms, that just as there are four distinct segments in the skull, so there are four inferior arches. Guard yourselves well, however, from supposing that these segments are necessarily identical and equal the one to the other, or that the arches are all of the same nature. We must go no further in our theory than anatomical facts justify; and we have seen that the development of this segment (*Na*, *Vo*), for example, and that process (*pmx*), is quite different from the development of these segments (*Fr*, *Os* to *So*, *Eo*) and these processes (*mx* to *Hy*.) Thus you will perceive that the doctrine of the unity of organization of the vertebrate skull—the only doctrine, I believe, which is of any great moment in anatomy—is one which rests upon a perfectly secure and stable foundation; and it is quite possible, not stepping one hair's breadth beyond the limits of the exact facts, and those deductions from them which are perfectly justifiable, to construct a theory of

the vertebrate skull which shall be capable of being represented by such a singular diagram as is given in Fig. 72, which looks singular simply because all the parts are made similar, in order to withdraw from your minds the notion that there is any special and characteristic feature about their individual peculiarities. But that remarkable result which seems to me to be the outcome of all our investigations—that result in which the investigations of the modern embryologist perfectly bear out Oken so far as he spoke of segmentation, and not of the vertebration of the skull—that is placed before you in a visible sort of shape in Fig. 72. Every vertebrate skull may be reduced

FIG. 72.

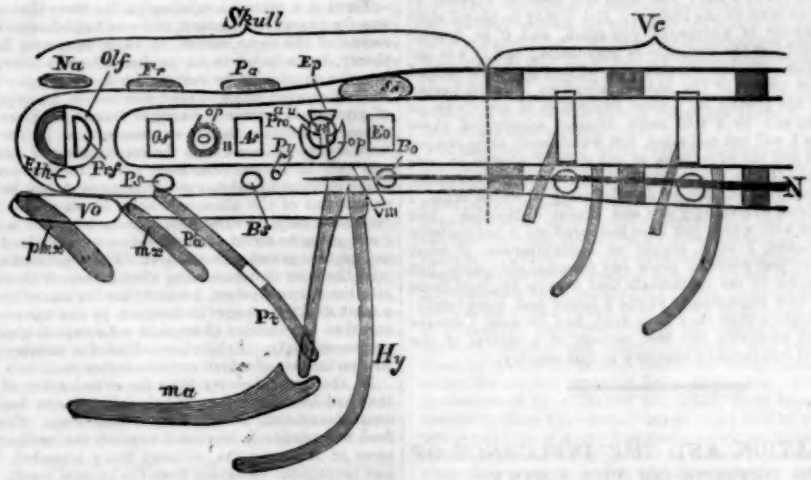


Diagram of the skull and vertebral column. *Vc*, Right of the vertical dotted line, two vertebræ and part of a third. *N*, notochord.—Left of the line, Skull: *Bo*, Basi-occipital. *Eo*, Ex-occipital. *So*, Supra-occipital. *Bs*, Basi-sphenoid. *As*, Ali-sphenoid. *Pa*, Parietal. *Ps*, Pre-sphenoid. *Os*, Orbito-sphenoid. *Fr*, Frontal. *Eth*, Ethmoid. *Pof*, Pre-frontal. *Na*, Nasal. *Olf*, Olfactory capsule. *op*, Eye. *As*, Auditory capsule. *Pro*, Prootic. *Op*, Opisthotic. *Ep*, Epiotic. *Vo*, Vomer; behind it is the para-sphenoid. II. Optic nerve. VIII. Vagus nerve. *pmx*, Pre-maxilla. *mx*, Maxilla. *Pa*, Palatine. *Pt*, Pterygoid, attached below to os quadratum. *ma*, Mandible. *Hy*, Hyoid.

to this. When the bones are all ossified,—some of them you will not find; for example, there is no basi-occipital in the frog,—but taking all osseous fishes and taking all reptiles, you might put piece by piece of the skull as you dissect it upon a plan like *Fig.* 72, and fill up the greater part of the whole. There is what you may call the occipital segment; there is the basi-occipital (*Bo*); the ex-occipital (*Eo*); the supra-occipital (*So*), always developed in cartilage; there is the basi-sphenoid (*Bs*); there the ali-sphenoid (*As*); the parietal (*Pa*), always developed in membrane; there is the pre-sphenoid (*Ps*); the orbito-sphenoid (*Os*), and the frontal (*Fr*); the orbito-sphenoid and the pre-sphenoid being always developed in cartilage; the frontal being always developed in membrane. Thus far the cavity of the cranium extends; these three segments are equivalent in whatever light you choose to look at them. But the foremost segment contains no prolongation of the cranium; it differs from the others undoubtedly in that respect. But it is always divided into two,—at least, there are only one or two trifling exceptions, as amongst the marsubranchial fishes. It is divided into two by the vertical prolongation of the front wall of the cranium, and it has on each side the nasal capsules, and the side parts of those capsules are protected by the pre-frontals, which are bones developed in cartilage. On the other hand, the nasals and vomer are always formed in perichondrium. Always, again, you find the pre-maxilla attached to this segment; always you find the maxilla and the parietals more or less closely connected with this; always, again, you find the three inferior arches connected with the sides of the skull. I might, if I pleased, call this diagram (Fig. 72) by some sounding name, such as archetype or the like, but I should prefer that you should look upon it as nothing so transcendental, but as simply standing in the relation of a diagram to a mathematical problem. It is quite possible to work your Euclid by propositions; it is also quite possible to have those propositions put in visible shape, as diagrams. Having them as diagrams very much facilitates the process; but I doubt whether it ever occurred to any mathematician to dignify his diagram as an abstract entity, and to talk of it as that which guided the creative mind in mathematics. So with this: the sole use of it is to help the student; the sole purpose of it is as a representative to the eye of that which is conveyed less strikingly, though more accurately, by words; and in order that you may contrast the two, I have (in Fig. 72) continued, in the same sort of rough diagrammatic way, the manner in which the vertebral column is formed, and the constituent elements of the vertebral column. There is the notochord (*N*) running along, as it does, to a certain extent in the base of the skull; and there is the segmentation of the vertebral column represented by shaded masses, indicating the inter-vertebral ligaments. There are the centres, drawn in circles, from which the bodies of the vertebræ are developed. There are the upper arches of the vertebræ (unshaded), which unite above to form the spines of the vertebræ. From the vertical dotted line begins a section of the vertebral floor; two vertebræ and part of a third are shown. The change in structure behind this dotted line in itself is sufficient to show—apart from the data of embryology to which I have referred—the profound and essential contrast which exists between the structure of any vertebral column and the structure of any skull.

But while denying utterly and wholly the homology of the skull with the vertebral column—while earnestly protesting against the notion that the skull is to be considered as in any sense a modified vertebral column,—I do not for one moment deny the existence of very considerable and very interesting analogies between the two. The use of these two words is perfectly familiar to the zoologist. The zoologist, for example, will say that, as between the hydrozoa, the hydroid polyps, and the polyzoa there are many relations of analogy,—they are both minute creatures, forming compound assemblages, having their mouths surrounded by tentacles, depending upon very much the same conditions of existence, and so on; all those resemblances are not to be denied; all those resemblances constitute a great analogy,—but no competent zoologist would for one moment permit you, upon his admission of that analogy, to say that the polyzoon was a modified hydrozoon, or that the hydruzoon was a modified polyzoon. The two sets of animals are constructed upon perfectly different types, but they exhibit many points of resemblance. It is exactly the same, in my apprehension, with the skull and the vertebral column: they are constructed upon perfectly different types, but they exhibit a great many points of resemblance; and it may be a most in-

teresting and indeed a most important matter to trace out the extent of this resemblance, and to see how far the analogy of the two may be carried. That against which I wish to warn the student, as being the introduction of mere confusion and error into comparative anatomy, is the mistaking these analogies, however extensive, for anything like homology; or supposing that because there are some resemblances, therefore there is an absolute unity of plan.

With that, Sir, I conclude my present course of lectures. I have, by no means in the formal manner in which a lecturer frequently conveys his thanks to his audience, but with much gratitude, to express my obligations to those gentlemen who have so constantly attended, and to yourself, Sir, for the patience and the attention which have been always granted to an exposition which I hope has often not been so difficult to them as it has been to the lecturer. But it may be that I shall have the honour of addressing you again, and if so, I shall take as my subject the structure of mammalia; and it was impossible to take any considerable view of that group, or indeed of any other group of the animal kingdom without having first cleared the ground by a clear exposition of my views on classification, and by a still more detailed account of those views which I will not call mine, but which seem to be simply the outcome and the expression of the state of science at present regarding the vertebrate skull. To do this it was necessary to enter into a vast number of details, many of which must, I fear, have been exceedingly dry and almost distasteful. But the attention with which you have honoured me is particularly satisfactory—not, I hope, simply as a gratification of what might be very just personal pride and personal obligation, but because it seems to me to indicate that here in England these subjects are now beginning to excite a larger and more intelligent consideration than they have done, and because I foresee in your kind attention the best earnest of a revival of the grand days of comparative anatomy in this country.

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ON

# ASSIMILATION AND THE INFLUENCE OF ITS DEFECTS ON THE URINE.

*Being the Gulstonian Lectures of* 1862, *delivered at the Royal College of Physicians, London,*

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(*Concluded from p.* 94.)

WE have reached thus far in our examination of how starch and sugar are disposed of in the system after being consumed as food. The starch is converted into sugar in the alimentary tract, and this, with the sugar ingested as such, passes into the portal system, and is carried to the liver. Now, according to the view propounded in connexion with the glycogenic theory, the sugar, in this way derived from without, passes through the liver, to become subsequently destroyed on reaching the lungs. From my own researches, however, I cannot admit the existence during life of the difference in the constitution of the blood on the two sides of the lungs that was inferred from the former method of experimenting adopted. It is true, if blood be removed from the arterial system, and the animal be afterwards killed, and the blood contained in the right cavities of the heart be collected without the observance of certain precautions, a wide difference in behaviour may be discoverable when the two specimens are submitted to analytical examination. A copious reaction of sugar may be obtained on testing the blood removed from the right side of the heart, or blood on its way to the lungs; whilst traces of sugar only are discoverable in the arterial blood, or blood which has just traversed the lungs. I have elsewhere pointed out the fallacious character of the deduction which was originally drawn from this result. The state of the blood *during life* cannot be inferred from the examination of that which has been withdrawn when even but a short time only has been allowed to elapse after death. According to my experiments, if the removal be effected from the right side of the heart as well as from the arterial system during life, the animal being at the time in a natural and tranquil condition, there is no discoverable difference of behaviour to be perceived between the two. The same remark applies, as far as my experience goes, whether starchy and saccharine principles have previously entered into the diet consumed or not. Now, such being the case, the inference suggests itself, that sugar absorbed into the portal system from the alimentary canal must be detained by the liver. But there is another point of view under which this subject may be looked at, and here conclusive evidence is to my own mind afforded that the liver does in reality pick out the sugar, and transform it into something else.

There is a material existing in the liver that not long since was discovered by Bernard, and was looked upon by him as the source of the sugar, which, in accordance with his glycogenic theory, he believed to be produced by the liver, and poured into the circulation for destruction in the lungs. To this material, on account of its alleged destination, he applied the name of glycogenic matter. As sugar formation, however, does not appear, according to my experiments, to be its physiological destination, I dissent from the employment of this appellation, and call it, in common with others, for the present by the name of amyloid substance—a name that has been suggested on account of the alliance it bears in its properties to starch. Now, this amyloid substance appears from the tables to which I am going to direct your attention to be derived from starch and sugar ingested with the food. Whilst prosecuting researches with the view of determining what became of the sugar received into the animal system, I found that the size of the liver was in a most striking manner influenced by the nature of the diet, and that the amount of amyloid substance it contained varied correspondingly. I therefore collected a number of examples, the particulars of which are now before me.

In the first place we have the examination of eleven dogs that had been kept for several days prior to death, under my own observation, on a purely animal diet. The quantity of food was purposely increased beyond the ordinary amount in some of the examples, without being attended, however, by any perceptible deviation from the general result.

| No. | Weight of dog. lbs. | oz. | Absolute weight of liver. oz. | Relative weight of liver to animal. |
|---|---|---|---|---|
| 1 | 15 | 8 | 7¼ | 1 to 32 |
| 2 | 12 | 0 | 7¼ | 1 to 26½ |
| 3 | 11 | 14½ | 6½ | 1 to 31 |
| 4 | 15 | 10 | 7¼ | 1 to 32 |
| 5 | 11 | 0 | 6½ | 1 to 29 |
| 6 | 11 | 15½ | 6½ | 1 to 29½ |
| 7 | 15 | 5½ | 8¼ | 1 to 28 |
| 8 | 24 | 4½ | 11¾ | 1 to 33 |
| 9 | 14 | 9½ | 7¼ | 1 to 32 |
| 10 | 17 | 0 | 8½ | 1 to 30½ |
| 11 | 9 | 8 | 7½ | 1 to 21 |
| Total | 158 | 11½ | 85½ | 1 to 30 |

An analysis was made of seven of the above livers, and the average amount of amyloid substance yielded was 7·19 per cent.

Five dogs were submitted to a course of vegetable food, consisting of barley-meal and potatoes, or, where this was refused, to bread and potatoes, for several days previous to death. Here are the results that were obtained:—

| No. | Weight of dog. lbs. | oz. | Absolute weight of liver. oz. | Relative weight of liver to animal. |
|---|---|---|---|---|
| 12 | 17 | 8 | 19½ | 1 to 14½ |
| 13 | 11 | 8 | 12½ | 1 to 14½ |
| 14 | 15 | 8 | 11¾ | 1 to 21 |
| 15 | 18 | 10 | 28 | 1 to 10½ |
| 16 | 17 | 5 | 12½ | 1 to 22½ |
| Total | 80 | 7 | 83½ | 1 to 15 |

The amount of amyloid substance was ascertained to be unusually large in all these livers; but an actual quantitative determination was made of only three of them. The average yielded by these three analyses amounted to 17·23 per cent.

The next four examples refer to dogs that were kept for about a week before death on an ordinary allowance of animal food, combined with a quarter of a pound of sugar, daily. It may be mentioned, that with three out of these four dogs the diet gave to the urine a saccharine quality; and although it was cane sugar that was ingested, yet it was grape sugar that was passed:—

| No. | Weight of dog. lbs. | oz. | Absolute weight of liver. oz. | Relative weight of liver to animal. |
|---|---|---|---|---|
| 17 ... ... | 10 | 3 | 12 ... ... | 1 to 13¼ |
| 18 ... ... | 11 | 14 | 12¾ ... ... | 1 to 14¼ |
| 19 ... ... | 17 | 11 | 10¾ ... ... | 1 to 26 |
| 20 ... ... | 12 | 0 | 13½ ... ... | 1 to 14 |
| Total ... | 51 | 12 | 49 | 1 to 16¼ |

A quantitative analysis of all four livers was made for amyloid substance, and the average yielded amounted to 14·5 per cent.

From this series of results we learn that the liver of the carnivorous dog may in a short space of time be doubled in weight by a vegetable diet, and nearly so by an animal diet conjoined with a liberal allowance of sugar. As a strictly animal feeder, the liver of the dog, from an average of eleven examples, nearly equalled half an ounce in weight to every pound. Under a strictly vegetable diet the average proportion given by the five examples examined exceeded an ounce of liver to every pound of dog. Upon the animal diet with the admixture of sugar, the figures resulting from the four observations yielded also, within a fraction, the proportion of an ounce to the pound. Looking at the amount of amyloid substance contained in the livers under an animal diet, the per-centage was more than doubled by the diets consisting of vegetable food, and the animal food with sugar.

The experiments I have conducted upon rabbits, in reference to this point, fully corroborate these results obtained upon the dog. I lay stress upon the two experiments to which I am now about to allude, because it appears to me the conditions are so simple that only one conclusion can be drawn from them.

In the first experiment, a couple of full grown rabbits were taken as nearly as possible resembling each other. One was kept fasting, whilst the other was fed daily for three days, through an elastic tube passed down the œsophagus into the stomach, on one ounce of starch and three quarters of an ounce of grape sugar mixed with water, so as to be rendered sufficiently fluid for injection. On the fourth day both animals were killed. Here are the results that were observed:—

| | Weight of animal. lbs. | oz. | Weight of liver. oz. | Amount of amyloid substance per cent. |
|---|---|---|---|---|
| Rabbit fasting ... | 3 | 1 | ... ... 1¾ ... ... | 1·3 |
| Rabbit on starch and grape sugar | 3 | 4 | ... ... 2¾ ... ... | 15·4 |

In the other experiments two half-grown rabbits were taken, and these likewise as closely as possible resembled each other in size and condition. One was kept fasting, and the other was fed on an ounce of starch and the same quantity of cane sugar daily for three days. On the fourth day the following results were yielded:—

| | Weight of animal. lbs. | oz. | Weight of liver. oz. | Amount of amyloid substance per cent. |
|---|---|---|---|---|
| Rabbit fasting ... | 1 | 14 | ... ... 1 ... ... | 1·4 |
| Rabbit on starch and cane sugar | 1 | 14¾ | ... ... 2¾ ... ... | 16·9 |

Here, rabbits are kept, on the one hand without food, on the other upon starch and sugar only. The rabbits present the closest correspondence in weight in each experiment. The liver weighs double in one case, and more than double in the other, after the starch and sugar than what it does under fasting. There is a large per-centage of amyloid substance after the starch and sugar, and in reality none after the fasting; for the figures 1·3 and 1·4 represent a dark-coloured matter which likewise falls as a precipitate under the process adopted for effecting the quantitative determination. I think we have a right to conclude that starch and sugar contribute to the production of amyloid substance in the liver.

But this amyloid substance, according to the glycogenic theory, constitutes the source of sugar which, it is alleged, the liver is intended as one of its functions to produce. You are aware of the chief experiment that was relied upon as the groundwork of this theory. An animal was taken and kept for some time on a purely animal diet, which precluded the introduction of sugar into its system from without. Its life being destroyed, blood was collected from the portal vein, and also from the inferior cava, or even the right side of the heart. The examination of these specimens displayed an absence of sugar in the blood going to the liver, and its presence, to an extent sufficient to give a strong reaction with the copper test, in that which had passed through the organ. The liver, also, was found to be highly saccharine, whilst none of the other organs gave signs of the existence of even a trace of sugar. These facts led to the conclusion being arrived at that the liver enjoyed an extensive sugar-forming function; and, as in the same animal, before death, it might have been shown that the blood circulating through the carotid artery only contained traces of sugar, it was further inferred that the sugar formed by the liver, and poured into the inferior cava through the hepatic veins, underwent destruction during its circulation through the lungs.

Now, the facts as they have been described by Bernard must be admitted to be susceptible of ready demonstration. In the opposition that I have raised to the glycogenic theory, it is against the legitimacy of the conclusions, and not the veracity of the facts, that I have contended. It is perfectly true that the blood of the inferior cava and right side of the heart, and also the liver of an animal feeder, are abundantly saccharine *after death*, but it is *not* true that the same is the case *during life*. The strict limits of logical induction have been overstepped, and in this consists my claim to be heard in support of the adverse cause my experiments have compelled me to take up. A change, as will be proved by experimental evidence, occurs so rapidly after death, that the result of any ordinarily-conducted *post-mortem* examination can no longer be accepted as affording, in reference to this particular inquiry, a representation of the *ante-mortem* state.

In the first place, I found, whilst prosecuting an investigation to discover the nature of the supposed destruction of sugar in the lungs, that the blood removed from the right side of the heart of an animal during life did not behave like what I believed it should do from the experiments I had seen performed, and had repeated myself, when the collection of the blood was made after death. It now gave no more indication of the presence of sugar than what was afforded by arterial blood. From the numerous experiments that I have since conducted, I may state at once that I have been unable to discover any difference of behaviour, when tested with the copper solution for sugar, between arterial and right ventricular and even the portal blood of a strictly animal feeder, on being collected so as to retain the natural condition belonging to life. I will test these specimens of blood before me, which have been procured respectively from the carotid artery, right side of the heart, and the portal vein of a dog previously restricted to an animal diet, in such a manner as to present us with a representation of the state they were in whilst circulating under natural circumstances during life. Each gives an indication of a traceable impregnation of sugar, but there is really no distinctly discoverable difference of behaviour between them.

The liver also, like the blood escaping from it, is in a very different state during life to that which has been hitherto considered to belong to it under glycogenic views, founded on the condition presented after death. To alight upon the organ in the state existing during life, it is necessary to adopt precautions that were not formerly observed. The transformation of amyloid substance into sugar takes place so instantaneously after the destruction of life, that unless special measures are adopted to check its occurrence, we cannot do otherwise than fail to obtain a correct representation of the physiological state. It is almost incredible that such a striking change should occur in such a short space of time as can be shown to follow in the case of the liver upon the destruction of life. My time, which is wellnigh drawing to a close, would not permit me, even if I desired it, to detail the steps that led me to the performance of the experiments I now adopt to display the fallacy of former conclusions. Suffice it to say that I have found it best to check the post-mortem change simply by the influence of an alteration of temperature. These liquids which I am going to test were derived from an experiment conducted in the following manner. An excellent-conditioned rabbit, which had been about four hours previously fed upon oats, was suddenly killed by destroying the medulla oblongata. Without a moment's delay the abdomen was opened, and a piece of the liver excised and plunged into a freezing mixture of ice and salt. Another piece was instantly afterwards thrown into a quantity of boiling water, and a third portion was left behind in the abdomen of the animal. Decoctions were now made of the three specimens of liver, and constitute the liquids I have here before me. On testing them with our copper solution, it is seen that, whilst the decoction derived from the portion of liver treated in an ordinary manner gives a complete orange-yellow reduction on attaining the point of ebullition, the other two do not produce any discoverable alteration; the test, although boiling has been continued for some little time, retains its original colour; but I dare say, on placing the tubes aside for a while, some particles of sub-oxide would subside, indicative perhaps of just a trace of sugar. I say "perhaps," because I am not so sure but that other principles may exist in the liver capable of giving rise to this slight deposition that may occur on cooling.

At all events, the copper test is so exceedingly sensitive a reagent, that, taking the largest deposition that may be noticed where the experiment has been expeditiously conducted, the quantity of sugar to produce it would be of quite an infinitesimal character; and I can call to mind instances where the particles of subsidence, after several hours' repose, have been only just susceptible of recognition by the eye.

It is thus rendered evident that the old method of experimenting led us into error when the conclusions were drawn from it that formed the basis of the glycogenic theory. It was imagined that the amyloid substance existed in the liver for the special purpose of undergoing transformation into sugar. Now, not only does it happen that sugar fails to be produced during life, like what was believed, from the state of the liver and the blood escaping from it observed after, instead of at the very moment of, death; but, in my own mind, it has been shown that the amyloid substance is formed out of sugar. If, therefore, the doctrines of glycogenesis were correct, the process would be, sugar into amyloid substance, and amyloid substance back again into sugar—a process, to say the least of it, presenting a want of accordance with the usual course of operations adopted by nature. Further, however, sugar could not be poured into the circulation, as was formerly believed, because the effect would be that it would escape from the system through the kidneys. Sugar entering the general circulation to any extent, no matter from what source, is sure to become recognisable in the urine. Even with the trace of sugar naturally existing throughout the whole circulatory system, sugar—of course in very minute quantity—passes off through the kidneys; for Brücke's experiments, which have been confirmed by Dr. Bence Jones, have shown that sugar exists in infinitesimal amount in healthy urine.

I do not mean to say that sugar forms the only source of the amyloid substance in the liver. It is clearly evident that such is not the case, because amyloid substance is present, notwithstanding restriction to a purely animal diet. My belief is this: that amyloid substance forms the first step in the assimilation of the saccharine element, and, also, is derived from an assimilating influence of the liver over some of the products coming from the tissues, and perhaps likewise from animal food—a process by which materials would be adapted for subsequent service in the system, instead of being simply discharged from the body. The next point is to state into what the amyloid substance is converted. But here I must needs for the present stop, because the data at command are as yet insufficient to enable me to proceed apart from hypothesis in this direction. Looking at all the facts of the case, however, as they stand, sugar could not form the special destination of the amyloid substance. If it were so, and our present constitution remained the same, we must all be diabetics; because sugar is not disposed of after entering the general circulation, as, upon fallacious grounds, was formerly believed, but is sure, in compliance with the physical property of diffusibility it enjoys, to make its appearance in the urine if previously existing in the blood. The amyloid substance happens to possess, as one of its chemical properties, an extreme susceptibility of passing into sugar. This susceptibility has play after death, and thus accounts for the sugar then so largely met with in the liver, and the blood allowed to escape from it. That the proneness to pass into sugar, however, must be held—almost if not quite completely—in check by some condition existing during life, is proved by the state of the liver and blood at the moment of death. I have said above "almost if not quite completely," to accord with the fact of the existence of the traces of sugar met with throughout the circulation, under natural circumstances, irrespectively of the kind of diet; and also with the fact of amyloid substance being obtainable from muscular tissue, which might therefore contribute to the traces of sugar in the circulation, as well as the liver.

Evidence is not wanting to show that the ingestion of sugar leads to the production of fat. Now, sugar being picked out by the liver from the portal blood to form amyloid substance, it seems to me that we have in this material an intermediate stage between sugar and fat, and that our attention should be directed towards following up the phenomena of change until the process is completed. It is in the cells of the liver that the amyloid substance exists; and as fat is also a natural constituent of these cells, we may possibly not have to look further than the liver for the accomplishment of the whole process of transformation.

In speaking of amyloid substance as being contained in the hepatic cells, I cannot help referring to the wise harmony observable in its being endowed with the character of non-diffusibility that it enjoys. Sugar is an exceedingly diffusible material, and therefore easy of transportation from the alimentary canal to the liver-cells, which pick it out from the portal blood. If sugar were not immediately transformed on reaching the cells, it must very soon again pass on; for, on account of its great disposition to diffuse, a circulation of fluid in such close proximity is incompatible with its detention. Amyloid substance occupies an antagonistic position to sugar in offering resistance to traversing animal membranes. Its retention, therefore, would be looked for in compliance with physical laws, so that, through the elaborating influence of the organ, a further advance might occur.

Under the glycogenic theory diabetes was considered to result either from an excessive production of sugar by the liver, or a defective destruction in the lungs. The result of my investigations is to bring us back to the view expressed in the work of Dr. Prout on Stomach and Renal Diseases, and to place it in the category of morbid conditions depending on defective assimilative action. It seems to me just this: When starch and sugar are consumed by a healthy person, there is no doubt that they undergo such a process of elaboration or assimilation as to adapt them for administering to the requirements of the economy before their elements are discharged amongst the effete materials. In diabetes, owing to a non-performance of the proper assimilative action, although the starch is transformed into sugar, yet the sugar fails to proceed further. Sugar passing through the liver and reaching the general circulatory system is sure to give rise to its appearance in the urine. From this default in assimilative action, the saccharine element of the food simply filters, as it were, through the body, instead of being retained and administering to its requirements.

Although there is the contrast I have spoken of in the assimilative power enjoyed by the healthy person and the diabetic, yet in the former the assimilative power is not to be looked upon as unlimited. The ingestion by a person of a large quantity of sugar upon an empty stomach has been noticed by observers to have been followed by a saccharine condition of the urine. In the case of my dogs that were fed on animal food and sugar, it will be remembered that, with three out of the four, sugar was discovered in the urine.

As the power of appropriating sugar under a state of health is not unlimited, so in cases of diabetes evidence of the existence of varying degrees of limitation, or extent of defective power, is not unfrequently observable. For instance, under my own experience, cases have occurred where the patient could consume a certain amount of starchy and saccharine food without the passage of sugar; but exceeding this amount immediately gave rise to saccharine urine. Others could not take starch and sugar at all without the escape of sugar with the urine; but as long as they abstained from starch and saccharine articles of food their urine has been devoid of saccharine quality. In the usual form of the disease, however, sugar is passed, notwithstanding even a rigid restriction to animal diet may be practised; so that, in addition to a want of assimilative power over the saccharine element, other materials are converted into sugar and discharged with the urine. Possibly these materials consist of those resulting from retrograde metamorphosis which the liver, under healthy circumstances, would have adapted for fulfilling some other purpose before discharge from the body.

It is interesting to notice in connexion with diabetes and albuminuria, that the two conditions may be experimentally induced by injuring different parts of the medulla oblongata. Bernard says: "If a puncture be made in the median line of the floor of the fourth ventricle, exactly in the middle of the space comprised between the origins of the auditory and pneumogastric nerves, both diuresis and diabetes are produced; whilst if the puncture be made a little higher up, very often only diuresis occurs, and then the urine is frequently charged with albuminous matter." In a repetition of Bernard's puncture of the fourth ventricle, I once observed that the urine of a dog was afterwards both saccharine and albuminous. I am not in a position, however, to state that the albumen did not exist there before, although I had no evidence to lead me to suppose that it did. Some cases of diabetes in the human subject are accompanied with the presence of albumen in the urine. Now, in some of these, the elimination of albumen may be dependent on structural disorganization of the kidney; but I am inclined to think that it may also in others be attributable to the albumen of the food undergoing imperfect assimilation, and thus escaping from a cause of the same character as that which I am of opinion occasions the escape of the sugar. Dr. Prout refers to a form of diabetic diuresis occurring in very young children of a weakly disposition, and mentions the fact of albu-

men and sugar often passing off together. He also speaks of the urine in these cases being sometimes opalescent or milky. Does it not seem that the elimination of sugar, albumen, and fat with the urine may be sometimes so related as to be dependent on one and the same cause, this cause being a defective assimilative action?

The hour informs me that I have no longer a right to detain you here, and it now only remains for me to perform the grateful duty of tendering my thanks to you, Sir,—to you, gentlemen, for the indulgent attention that you have been pleased to bestow on these Lectures. In the remarks that I have been afforded the opportunity of making here, I have striven to engage you upon topics that I hoped might prove worthy your consideration. It has fallen to my lot to have been drawn by circumstances into the special study of physiology—a study which cannot but be conceded as forming one of the principal supports upon which the science of Medicine is based. Philosophers have extricated chemistry, astronomy, and such-like sciences, from the depth of mysticism and uncertainty; but unfortunately for Medicine, the science of physiology still remains in its early age. Unfortunately, also, for the science of physiology, it is almost exclusively upon those engaged in the practice of an arduous profession that the labour is thrown of contributing to its advance. It is undeniably a drawback for physiology that there are not greater facilities offered, or a greater encouragement given towards prosecuting its researches. It may be said,—certainly in our own country,—that scraps of time stolen from a busy professional life, often at a considerable pecuniary sacrifice, form the only source for promoting its advance. But physiology is advancing, and there is reason to anticipate that in due course of time it will be placed upon as satisfactory a footing as either of the other sciences. There is nothing, indeed, inscrutable about the study of life. We must recognise here, as elsewhere, the existence of a force acting upon matter, and closely investigate its manifestations. I can have no doubt that there reigns in my body a force which does not exist in the mere earthy matter over which I am standing. The manner, however, in which this force is but too often dragged forward is a great abuse of it; for, if at every step we are to fall back upon the term "vitality" as an expression of the cause of phenomena that may be observed, instead of seeking for an intelligible explanation, vitality only cripples, shackles, fetters our progress, and, used in such a manner, constitutes an excuse for the idle and the ignorant.

In conclusion, Sir, I would fain hope that I now hand back to you untarnished the trust that you reposed in me. Whatever the result, the effort has certainly not been wanting to render myself worthy the honour of having been selected to deliver these Lectures, placed at your disposal by the ancient bequest of Dr. Gulston.

## ON A CASE OF OBTURATOR HERNIA.

### OPERATION.

BY WALTER COULSON, ESQ., F.R.C.S.

I AM induced to bring this case before the profession as a contribution to surgical literature, thinking it may interest from the very rare occurrence of protrusion of the intestine through the obturator foramen, and from the still greater rarity of recorded instances in which operations have been performed for the relief of this condition. In cases of intestinal obstruction, where this obstruction cannot be referred to hernia or malignant disease, the question arises whether the surgeon is justified in resorting to abdominal section after having tried all ordinary measures, and where a fatal termination seems otherwise inevitable.

Mrs. S——, a widow, aged about sixty, mother of nine or ten children, was seized with constipation and sickness on Nov. 13th, 1861. On Nov. 15th she applied to Mr. Bolton, of Claremont-square, who, after making an examination for hernia, and ascertaining that there was no peritonitis, gave calomel and colocynth. Subsequently various purgatives were tried, together with turpentine enemata, and the last brought away a small quantity of fæcal matter. On Nov. 24th, Mr. Goddard, of Old-street-road, saw her in consultation; and on Nov. 27th, Mr. Coulson, sen., also saw the case with Mr. Bolton. It was supposed that some obstruction existed in the large intestine, and I was called in with the idea that it might be necessary to operate for artificial anus.

Nov. 28th.—When I first saw her she was lying on her back, her countenance anxious and expressive of suffering; but her face was not pinched as in collapse, and the voice was good; skin warm and moist; pulse about 100, and weak; tongue coated in centre, but moist and clean at edges. She suffered at intervals of five or ten minutes from great pain in the abdomen, and she had recently vomited a considerable quantity of distinctly stercoraceous matter.

On examination, the abdomen was found large, but not particularly tense; the resistance to palpation and the resonance on percussion were equable over its entire extent; and the colon did not appear to have any considerable amount of gaseous or fluid contents. Pressure occasioned no pain, but induced a vigorous peristaltic action of the small intestine, the coils of which could be distinctly traced through the parietes of the abdomen, greatly distended, occupying every part, and very marked in inguinal and colic, as well as in umbilical region. This action recurred at frequent intervals, independently of manipulation, and was always accompanied with great pain. This condition did not last long, not more than half a minute, and when the peristaltic motion ceased she was comparatively free from pain. A careful examination of the different apertures through which hernia might protrude was made, and the vagina was explored, but no tumour could be detected, and on forced coughing there was neither impulse nor pain at any particular point. My diagnosis was, no strangulation, but obstruction about the middle of the ileum, situated in some part of the pelvis, and I conjectured that it was caused by a band of old adhesion crossing over and compressing the bowel. The considerations on which I founded this opinion were as follows:—1st. All the symptoms pointed to intestinal obstruction, but it was concluded that it was not in the large intestine, but that it existed at some distance above the ileo-cæcal valve, since it was evident that distension of the whole length of the small intestine to the degree seen to exist when the bowel was thrown into peristaltic action would have produced extreme distension of the abdomen, and would have rendered its walls much more tense than was actually the case. 2nd. The duration of the obstruction before the access of stercoraceous vomiting, the absence of decided collapse, with the fact that there was no pain on pressure at any part, made me certain that true strangulation of the bowel could not exist. 3rd. As this peristaltic action was distinctly seen to extend equally over the entire abdomen without arrest at any one spot, it was inferred that the obstruction was somewhere in the pelvis.

As to the nature of this obstruction, a guess only could be made, and the most probable conjecture seemed to be the presence of a band of lymph compressing bowel, or invagination of some portion of intestine. The question of immediate operative interference was discussed; but I did not consider that I should be justified in resorting to so hazardous a measure without first passing a long tube, and ascertaining by the injection of a large quantity of water that no stricture existed in the large intestine. Having placed the patient on her left side, I proceeded to pass the tube, but was unable at first to pass it more than three inches. Finding this difficulty, I requested Mr. Bolton gently to inject the warm water so as to distend the bowel, and in this way I was enabled by degrees to pass the tube beyond the sigmoid flexure. When the rectum and descending colon were filled, the patient was placed on her back, and the injection of fluid continued. After filling the transverse colon, she was turned on to her right side. In this way the whole colon was filled with warm water. This could be distinctly traced by percussion, and it displaced to some extent by pressure the contents of the small intestine, inducing stercoraceous vomiting, but apparently none of the fluid passed the ileo-cæcal valve. This occasioned considerable exhaustion, and the only result was to bring away a small quantity of fæcal matter. It was resolved to keep up the strength by nutrient enemata, and operate next day if no relief was obtained.

Nov. 29th.—Five P.M.: Though somewhat weaker, the patient was in much the same state as on the previous day. There had been no action of the bowels, and the pain and vomiting had continued. She had had some sleep during the night. The secretion of urine was scanty. It was evident that unless some relief was speedily obtained she must die. It was accordingly determined, in consultation with Mr. Bolton (of Claremont-square), Mr. Goddard (of Old-street-road), and Dr. Broadbent, that an exploratory incision should be made in the abdomen. A catheter was first passed, and an ounce of urine withdrawn. Chloroform having been administered, an incision was made in

the median line, from an inch below the umbilicus downwards for a distance of three inches. After dividing the linea alba and the transversalis fascia, an opening was made in the peritoneum only large enough to admit the finger. On doing this the cæcum was found empty, but the distended intestine rendered it impossible to find the seat of obstruction without enlarging the incision. This was accordingly done, and the distended small intestine was brought into view, and was followed for some distance without meeting with the obstruction. Accordingly I passed my hand down towards the cæcum and encountered a portion of empty intestine. This was traced coil by coil until it reached the obturator foramen in the left side, in which a knuckle of intestine was found firmly impacted. Some difficulty was at first experienced in withdrawing it from the canal; but this was at last effected by continued and cautious traction. On examining the portion that had been impacted, it was found to consist of about two inches of the ileum, a good deal congested, but not so much so as might have been anticipated. The intestine was now replaced, and the wound was brought together by six sutures and strips of adhesive strapping. She recovered quickly from the effects of the chloroform, and there seemed to be little shock from the operation. A small quantity of brandy was given, and she was ordered twenty drops of tincture of opium, and a drachm of tincture of opium was administered with a little beef-tea as an enema. At half past eight P.M., when I again saw her, she seemed a good deal exhausted, and the bowels had acted twice copiously. The exhaustion was partly due to the rapid discharge of the contents of the intestines and to the exertion attendant on the attempt of clumsy nurses to make a large chamber utensil answer the purpose of a bed-pan. She also complained of pain in the abdomen. Brandy was ordered to be given freely. Mr. Bolton saw her again in the course of the evening, but it was evident that there was no chance of saving her life. The bowels continued to act violently, and she died at twenty minutes past two A.M., Nov. 30th.

A case remarkably similar to this is given by Mr. Hilton in the thirty-first volume of the "Medico-Chirurgical Transactions." The hernia was detected only after the abdomen had been opened, and the patient died a few hours after the operation. The question arises, Ought the nature of the case to have been recognised in this instance? I believe it was impossible. Femoral or inguinal hernia not existing, a strict examination was made with especial reference to obturator and other uncommon varieties of rupture. No swelling could be made out; there was no distinguishable difference between the two sides; and there was no pain or tenderness to serve as an indication. This is explained by the fact that there was incarceration of intestine, but no true strangulation; had this existed, all the symptoms would have been more severe and the progress of the case more rapid, and the bowel would not have resumed its action so soon. In no case of intestinal obstruction should gastrotomy be performed without first exploring the rectum and colon with the long tube. It was satisfactory to find that the operation had not robbed the poor woman of any chance of life, as she must inevitably have died had it not been done. Her death was but little accelerated by the operation—scarcely any blood was lost, and she suffered very little shock,—but it was certainly hastened by the incompetence of friends who acted as nurses, and the exhaustion caused by the rapid emptying of the intestine.

St. James's-place, St. James's-street, Aug. 1863.

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ON

# ELECTRICITY AS THE PRINCIPLE WHICH CAUSES THE VITALITY AND COAGULATING PROPERTY OF THE BLOOD.

BY R. C. SHETTLE, M.D., Shaftesbury.

## No. II.

IN my last paper I endeavoured to show the mode in which electricity is generated in the lungs, taken up by the iron of the blood, and conveyed by the same channel to the systemic capillaries. I must now seek to make it clear why the electricity is taken up in the pulmonic, and discharged again in the systemic, capillaries; for which purpose it will be necessary to enter somewhat upon the differences which characterize the two sets of vessels.

The structure of the lungs is admirably adapted for the exposure of the blood in the capillary to the action of the air. "Between the atmospheric air in the cells and the blood in these vessels nothing intervenes but the thin membrane of the cells and capillaries and the delicate epithelial lining of the former; and the exposure of the blood to the air is the more complete, because the folds of membrane between contiguous cells, and often the spaces between the walls of the same, contain only a single layer of capillaries, both sides of which are thus at once exposed to the air."—(Kirkes.) And, apparently, we could have no more perfect method of exposing the blood, and the iron it contains, to the action of the air, so as to enable it to carry off any electricity developed. It is more than probable that the delicate membrane of which the air-cells are composed is but imperfectly supplied with nerves, as compared with more sensitive structures of the body. And it must be remembered that it is not from the blood which has just been regenerated that the lungs derive their nutrient vessels, such being sent to them from another source; and the venous blood which is sent through the pulmonary arteries to the lungs is transmitted for the express purpose of being regenerated, immediately after the completion of which process, it passes into the pulmonary veins, and, having entered those vessels, it is no longer subjected to the action of, or in any way affects, the nerves. So that let the supply of nervous influence to the lung-cells be as perfect as to any other portion of the body, it could only have influence over the blood sent to the lungs through their nutrient vessels. We have every right to assume that although the quantity of iron contained in the blood may and does vary at different times, and especially under disease, yet that the amount existing in the globules at any given moment is equally distributed, and that each globule has sufficient iron in itself to attract an amount of electricity capable of effecting a sensible change in itself with regard to colour (of which I think I have given proof already). The quantity of iron in the globules being equal, the amount of electricity also must be equal, such being regulated partly by the amount of attracting force, and partly by the amount generated. And so long as such a state of affairs remains, the globules have no power of exerting any attracting influence over each other, at any rate under ordinary circumstances; but when the stimulating fluid has been pumped into the systemic capillaries, an immediate change in their state is effected under the chemical action which takes place there. No matter what organ or tissue is supplied, chemical changes are at once set up, fresh electricity must be developed under a form of electrolysis—that is, the electricity that is in excess or plus, must attract the electricity that is minus, under the influence of which the various secretions are effected, and new matter is deposited; whilst the blood-globule, deprived of its stimulating property, becomes dark and passes into the vein; for having once lost its electricity during its passage through the capillary, it cannot regain such, its place in the circulation being at once occupied by globule after globule, in which corresponding changes are ever going on. In this way the vital energies of the parts are maintained; and we have no difficulty in assigning a reason for the deposition of matter to form bone in one place, of brain or nerve-tissue in a second, or of muscular tissue in a third, and so on throughout the system generally, these processes all being under the influence of the laws which determine electric action, and differing only in degree from the action of electro-plating—the systemic capillary acting as one electrode, probably the negative; the secreting tissue or membrane supplied with its nerve-filament acting as the positive electrode. The regularity of these various processes under such influences (influences which are not imaginary, but must exist) cannot create surprise, for they must be carried on with all their regularity so long as the body continues in a healthy state. The various senses may also be entirely amenable to the same laws, and may have their origin in peculiar modifications of electric action.

I now hope to be able to show the true nature of inflammation and its analogy to coagulation of the blood, which is clearly, as Mr. Hunter asserted, "an operation of life;" with this difference, however, that an attack of inflammation is attended with a morbid increase of the operation. If we apply an irritant—say a mustard plaster—to some portion of the surface of the body, we produce in the part redness, heat, pain, and, if we continue the process further, swelling also. Let us see what takes place under irritation. More blood is drawn into the capillaries, the immediate effect of which must be to increase the redness of the part. The secondary effect is to increase chemical action. Consequently a larger amount of electricity, or, in other words, vital energy or nervous power, must be de-

veloped, and the electrolytic action of this process involves the necessity of the nerves of the part yielding an amount of electricity equal to the amount supplied by the increased quantity of blood, and so substantiates the opinion of Dr. Radcliffe, that there is an expenditure of natural electricity during pain. Dr. Radcliffe, in his valuable lectures "On Certain Disorders of the Brain and Nervous System," (published in THE LANCET,) says, in Lect. IV., Part II., proposition 72, "In the case of a sentient nerve, as in the case of a motor nerve, the nerve loses electricity when it passes from a state of inaction into that of action." The experiment of M. DuBois-Reymond, given in proof, is most conclusive, and at once shows the effect of hot water in removing electricity. Nor is the experiment of M. Matteucci, given by Dr. Radcliffe in prop. 73, less instructive, as it shows clearly that the cause of sensation is identical with the cause of motion. Now, the increased flow of blood to the part establishes the blood as the greater source of electricity, or the positive pole abstracting electricity from the nerve; whereas under ordinary circumstances the nerve exercises the greatest amount of power, and is the positive pole abstracting the electricity of the blood, and we thus perceive that pain is experienced at the same time that electricity is removed from the nerve. Nor do we want for ocular demonstration of this being the true state of affairs; for in some cases of acute inflammation, where the redness is most vivid, the blood-globules are seen to pass unchanged from the arteries to the veins, the supply of electricity from all sources in the locality being insufficient to make demands upon some portion of the blood for the electricity contained in it, and it consequently passes on unaltered. We have thus disposed of the redness and pain of inflammation. The cause of the increased heat of the part must be equally clear. It is impossible for the opposed electricities to combine without the evolution of heat, and the greater the amount of action going on, the greater must be the amount of heat evolved; and I would point to this union of electricities in the electrolytic action, which is so constantly going on in every part of the body, as the true and only source of animal heat. Swelling is the result of distension of the vessels, and a transudation of larger quantities than under ordinary circumstances of the crassamentum of the blood into the surrounding tissues—a process which is much increased, if not entirely caused, by the passage of a current of electricity. I accidentally obtained a proof of this the other day by the vessels of the bladder which coated my electrodes becoming injected with blood, such blood having been drawn into the bladder by the force of the current of electricity. The general texture of the bladder was also coloured with the blood, although previous to immersion it was perfectly white, and the vessels invisible. Thus we see how nearly allied are the processes of growth and inflammation, whilst the only difference between coagulation and inflammation is, that the living material ceases to be supplied when the process occurs after death or out of the body free from electric action, and blood effused and coagulated in the living body may become organized by the drawing of living or electrified blood into the meshes of the fibrin.

To take an opposite class of complaints. Scrofulous disease in all its varied forms, no matter whether phthisis pulmonalis, mesenteric disease, or the simple deposition of tubercular matter in any part of the system, can now, I think, be easily understood; and it is evident why such diseases attack so frequently and make such fearful ravages amongst the ill-fed, ill-clothed, unwashed, and impure air breathing part of the community, seeing in such subjects the body is badly nourished, and there is a deficiency of chemical action, and consequently a deficiency of electricity, or the principle which gives life to the tissue. The method in which cod-liver oil acts in scrofula, as well as the action of the phosphoric acid, iron, &c., appears clear. The cod-liver oil may be said to benefit, not only by giving nourishment to the body, but by supplying to the blood a large quantity of an electro-positive agent, which, when brought into electrolytic affinity with the oxygen of the air, gives rise to an increased quantity of the vitalizing principle. The iron improves the attracting power of the globules, and the phosphorus gives tone to the brain and nervous system generally, into the composition of which tissues it enters; and under the judicious administration of such and various other remedies of the same class there is usually considerable mitigation of the symptoms, unless the disease has taken such hold of the system as to make such improvement, humanly speaking, impossible. At the same time the necessity for attending to the state of the atmosphere and the cleanliness of the skin is of great importance, inasmuch as under the influence of warm temperature, especially if the air is charged with much moisture, (and if, under disease, there should be a deficiency of iron in the blood or want of tone in the nervous system,) there is a facility for the egress of the vital principle, the removal of which from the body must relax and weaken the powers of life. The combined effects of warmth and moisture upon the human body are precisely similar to the effects of the same agencies upon the electrical machine, and are well shown in the experiment of M. DuBois Reymond above referred to. Cold always retards the passage of a current of electricity, and heat facilitates the process. Water, also, is an excellent conductor. I would here allude to the effect of cold in retarding the coagulation of the blood. If the blood be frozen coagulation will be prevented; but such will occur when thawed—that is, when the electricity existing in it is allowed to exert its influence. In substantiation of this view I would refer to the well known fact, that the thinnest film of ice is sufficient to prevent the passage of a current of electricity. We can thus very readily account for the rapid progress phthisis so frequently makes in individuals afflicted with such disease who have sought warm climates, where the atmosphere is loaded with moisture. It is true that the body may be well nourished, the tone of the nervous system supported, and the lungs relieved of a portion of their work by means of the skin, and so the rapid progress of the disease may possibly be arrested for a time; but the disposition too frequently returns with increased strength as soon as there is any relaxation in applying the remedies, or the system has become so habituated to them that they lose their effect. Upon the same principle we can readily understand the cause of the distress of individuals predisposed to spasmodic asthma when subjected to an atmosphere loaded with moisture, as well as the almost inevitable increase of pain of those afflicted with chronic rheumatism in damp weather.

The state of the blood in typhus, cholera, and other diseases of that class appears to be identical, so far as it is possible to judge from outward appearances, with some specimens of blood which a few days since I submitted to the action of my paper and bladder covered platinum electrodes, after exposure to which for a period of two days the blood became perfectly black like pitch, and coagulated but very feebly, the coagulum having very much the appearance of very thick pitch. Decomposition also very rapidly occurred in it, considering it had not been exposed to the action of the air, which is usually considered to facilitate that process. This change was effected equally in the arterial as in the venous blood.

## NOTES ON A CASE OF CHRONIC MANIA, COMPLICATED WITH PERITONEAL ADHESION.

By R. PEEL RITCHIE, M.D., F.R.C.P.E.,
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*Chronic Mania of nearly twenty years' duration; hallucinations connected with peritoneal inflammation and strangulation of ileum by cord-like adhesion; fatal result.*

IN THE LANCET of the 25th of April last there is noticed a case of strangulation of the small intestine around the pedicle of an ovarian cyst. Although strangulation arose from a different cause in the following case, I have been induced to offer it for publication, as presenting some relation to the other, and as being of rather more than usual interest.

Mrs. R——, aged forty-nine, was admitted as a private patient into Bethnal House Asylum, London, on the 8th of September, 1843, suffering from chronic mania. When admitted, she was stated to have been in good general health; mind generally disordered, but quiet. She was, however, subject to paroxysms of excitement, the cause of which she alleged to be two other persons who used some means of which she was not cognizant to excite her. She had various other delusions, such as that her actions and feelings were controlled by others; "that her husband" (he had been dead for some years) "is alive, and she occasionally converses with him;" "she hears a voice abusing her," &c.

From this date there are various entries in the Case-book, from which it appears that she had delusions of a similar nature but of increasing intensity. Her bodily health was good, and unaffected by severe illness.

In 1851 the hallucinations of hearing were very marked

"Her papa called on her one night;" and "she hears gods and goddesses talking to her." She was also very abusive at times to those around her, as she supposed they annoyed her by talking to her. On the 30th of September in this year she "says she is in the family-way, and insists upon being delivered by the medical officer; that the child must have been twelve months in the womb; and that her husband, Mr. R——, is introduced to her bed at night."

During the year 1852 she continued in much the same state, frequently expecting her delivery, and that the child would be delivered by turning. On the 6th of May in this year she "says that she heard the child she is pregnant with say, on the 18th September last, 'It is a shame to keep me here.'"

During 1853 her state, physical and mental, suffered no alteration.

At the commencement of the year 1854 the following entry occurs in the Case-book:—"Delusion and condition persistent. Says she shall be delivered this night (10th January) of three children, and that she can hear them talking to her."

On the 5th of October, 1855, it is reported that "Lately having a slight colic attack, fancied she was quickening." She appears to have been previously occasionally liable to similar attacks of colic. General health good.

In the succeeding years her delusions and hallucinations are more numerous, but unchanged in character. She pulls out her hair, and alleges some one does it in the night. General health as at previous reports.

In January, 1859, "Delusions continue. She has not yet lost hope of the 'little one' coming, and frequently converses with it. She also keeps a diary, but complains that some one alters the dates." In September, "thinks a sea voyage would bring forward the baby. Is frequently excited." In October she is reported to be in bed, "as one of the little ones was sick."

In the Case-book, under Sept. 8th, 1860, it is reported, "On Sept. 4th requested, as she is frequently in the habit of doing, to have an aperient pill, and had a slight cold. She appeared to be suffering from one of her usual attacks of colic. She had the pill, but was sick, and rejected it. On the 5th, feeling sick, she kept her bed; there was no febrile reaction, nor manifestation of inflammatory symptoms, but she complained of slight local abdominal tenderness. On the 6th, the bowels not having responded to a simple enema, other enemata of a more stimulating character were given, which were followed by some action; the sickness, however, continued. On the 7th she was not improved. On the morning of the 8th the bowels were relieved spontaneously, and the sickness had been relieved by opium, brandy, and ice; there was considerable tympanitis and pain, chiefly in the left lumbo-iliac region; the pulse was weak, and of increased frequency. About eleven A.M. a change for the worse occurred; the pulse, previously below 100, rose to 120, and became very weak; the skin clammy, and the face pinched. She gradually sank, and died at half-past two P.M. She had frequently suffered from attacks of colic, which she referred to the supposed baby's movements. This attack, in its early stages, resembled one of those."

When the abdomen was examined forty-eight hours after death, it was distended with flatus. On exposing the peritoneum it was found to be slightly congested in a few patches. On opening the abdominal cavity the small intestines were found arranged in transverse coils, the free surface being much congested, and presenting indications of inflammatory action. The mesenteric surface was less congested; the mesentery, which was infiltrated with serum, was of pulpy consistence, and easily torn. The transverse colon was much contracted about its middle; the descending colon was also contracted, the walls being much thickened. On raising the coils of the small intestine about twenty inches from the ileo-cæcal valve, a strong cord-like adhesion, an inch and three-quarters long, attached the ileum to the brim of the true pelvis. A loop of the ileum betwixt this attachment and the termination of the small intestine had fallen into the cavity of the pelvis, and by twisting upon itself was prevented by this adhesion from being freed. A strangulation of the gut was thereby effected, and the passage through the intestine stopped. The strangulated loop did not contain much solid matter, but was distended with fluids.

The case presents for consideration the frequent attacks of colic, the cord-like adhesion, and the coexistence of delusions of a particular kind with inflammatory adhesions of the intestines. There can be little doubt that the attacks of "colic" must have depended on the same cause (though to a less extent) as that which at last ended fatally. That they depended upon the adhesion occasioning temporary obstruction cannot be doubted. The adhesion was strong and dense there was no other, and it must have existed for years. The difficulty is to fix the period at which this adhesion was formed, for during the whole period of her residence in the asylum I could ascertain neither from Dr. Millar nor from the case-books that she had ever suffered from any inflammatory attack of the abdominal viscera, or indeed from bodily illness, except an occasional catarrh, or one of those attacks of "colic" which were of slight severity and of short duration. The probability, therefore, is, that this fibrous peritoneal cord had been formed previously to 1843, and had existed without occasioning any serious inconvenience for nearly twenty years. At last, however, the intestine had got so situated that whilst fluids could pass readily into the portion of bowel which formed the loop, there was no passage out of it, and hence was excited the inflammation which terminated in a fatal result.

The other points of interest in the case are those connected with the mental symptoms. The mental disease must have existed for some considerable time previous to 1843, for on her admission in that year it is stated that the disease had continued too long to expect recovery. Of the cause there is no statement, and it is "not known" whether the malady was hereditary or not. As a coincidence, it may be stated that her husband died insane.

From the first the disease was characterized by hallucinations of the special senses, chiefly of hearing. These are generally of an obstinate nature, and little benefited, especially when chronic, by treatment, and frequently lead to paroxysms of excitement, and often to violence or attempts at murder or suicide.

Previous to 1851, the variety and intensity of the hallucinations were increasing; but it was not till that year that the delusion as to the pregnancy attracted notice. There was no increase of size to suggest the idea. Her period of life was advanced, and the delusion appears from the first to have been connected with the sense of hearing; for on the 6th of May, 1852, she says she heard the child say on the 18th of September, 1851, "It is a shame to keep me here." From this date she had always associated the pregnancy and aural hallucinations together, sometimes even hearing three children talking.

Inflammatory lesions of the mucous membrane of the intestinal canal are, according to some authorities, of frequent occurrence amongst the insane. In 1818, Esquirol pointed out, although the pathological condition had been *observed* previous to this date, the change of position of the transverse colon, especially those suffering from melancholia.

Bergman, in 1821, directed attention to the contraction of the colon, a condition which Guislain remarks has, as well as the displacement of that viscus, almost invariably been accompanied in insanity by other changes of texture, and especially with inflammations. But modern pathologists consider these contractions to be, for the most part, due rather to a physiological than a pathological change—the mere empty condition for some time before death causing that portion of intestine to contract. In the descending colon, however, in Mrs. R——'s case, the thickening of the intestinal walls indicated an inflammatory origin. There was no displacement of the transverse colon. That the mind was affected for a considerable time before the delusion connected with the abdomen became manifest, there is no question.

In contraction of the colon mentioned by Bergman, the delusions frequently have reference to the abdominal sensations; and to quote from Guislain, "Le malade croit avoir des grenouilles, des serpens, dans le ventre." But I have not found the belief in a voice speaking from the abdomen, as in the case I am considering, unless associated, as in Mrs. R——'s case, with inflammatory *adhesions*.

The explanation I would offer of such a case is, that the mind having become affected, the abdominal sensations are from the inflammatory attachments altered, and the natural sounds and sensations produced by the passage of flatus, fluids, and more solid matters through the intestines, occasion the individual afflicted with hallucinations of hearing to believe that a voice is talking from the abdominal cavity. In alterations of the colon, a symptom which has been mentioned is great excitability of the sexual organs. Mrs. R—— showed this in but a slight degree; but to the childless wife, forgetting her advanced age, what more probable than that the wish was father to the "idea," and that to the hallucinated female the supposed abdominal voice should be that of an unborn child.

Edinburgh, 1863.

FACULTY OF MEDICINE IN TYROL.—The foundation of a school has been voted by the Diet of Tyrol. Lectures are to be delivered both in German and Italian.

# A Mirror
## OF THE PRACTICE OF
# MEDICINE AND SURGERY
## IN THE
# HOSPITALS OF LONDON.

Nulla autem est alia pro certo noscendi via, nisi quamplurimas et morborum, et dissectionum historias, tum aliorum, tum proprias collectas habere, et inter se comparare.—MORGAGNI *De Sed. et Caus. Morb.*, lib. iv. Proœmium.

## MIDDLESEX HOSPITAL.

### PUERPERAL PELVIC CELLULITIS; PERIMETRITIS; THREE CASES; REFERENCE TO OTHER CASES NON-PUERPERAL.

(Under the care of Dr. HALL DAVIS.)

THE following is an abstract of the cases of perimetritis recently attended in Prudhoe ward, from the reports of Mr. Langford and Mr. Charles Pyle, successively obstetric assistants:—

The cases here described all followed upon childbirth, the most frequent precursor of the affection. They were introduced and attended by more or less constitutional disturbance, and terminated in recovery at different periods,—two, as is the more usual sequence, by abscess, which pointed at the abdominal surface; one by resolution, the inflammatory deposit and enlargement gradually disappearing without suppuration. The first followed upon version, the delivery being preceded by flooding; the second upon protracted labour and forceps delivery; the third upon placental adhesion, but followed by an error of diet. In none of the three cases did the disease, as it more usually does, succeed to primiparous labours.

CASE 1.—Harriet W——, aged twenty-three, admitted on the 9th of March last. She has been married three years, and has two children. Previous health good. On Dec. 20th, being advanced in her second pregnancy, she was attacked by flooding, which continued till the 23rd, when at midday labour supervened. At six P.M. her medical attendant delivered her, by turning, of a living child, which presented transversely. On the day following she had a rigor; much abdominal pain; a hot skin; thirst, and, at night, delirium. On the third day after her confinement diarrhœa set in, and continued more or less for two or three days. The abdominal pain continued for the next three weeks. Turpentine stupes were applied to the abdomen, and pills were given till the gums became sore. Some improvement, it appears, followed, but later she relapsed, the pain returned, and it was found greatest in the left iliac region, where a hard swelling was perceptible.

*State on admission.*—Pale and emaciated; countenance anxious; cheeks flushed; skin hot and dry; pulse 136, weak; bowels confined four days. An enlargement, dull on percussion, occupies the whole of the left iliac region; tender on pressure, and immovable. Vaginal examination detects induration through the roof of the vagina, but more especially on the left side. A fixed condition of the uterus; it is not involuted, nor lessened to the size it should present at this period after delivery. The urine is voided without difficulty; bowels confined; great tenderness over the entire abdomen. Gregory's powder, a scruple; after its action to take sesquichloride of iron and chloric ether thrice daily; beef-tea, milk, arrowroot, and four ounces of wine were ordered. Turpentine and linseed poultice to abdomen.

March 10th.—Countenance less anxious; abdomen still very tender; pulse 126; bowels sufficiently open; sleep much broken. Continue remedies.

12th.—Pulse 116; sleep better; enlargement stationary; tenderness still exists. To take a drachm of solution of bichloride of mercury in water thrice daily. Same diet.

15th.—No pain except on pressure; pulse 100, very weak; much mucus-râle in the bronchial tubes; dyspnœa. Dr. Stewart was requested to examine the chest, but found no pulmonary crepitation; no lung consolidation. A sinapism to the chest afforded much relief. Treatment as before.

21st.—Half a drachm of tincture of cinchona was ordered with each dose of the bichloride of mercury.

23rd.—Increased pain; shivering; sleeps badly; gums tender. Omit the bichloride; bran poultice to abdomen; quinine mixture; half a grain of morphia at bedtime.

24th.—Face flushed; skin hot; pulse 120. Citrate of potash draught every four hours. Continue the wine and morphia.

25th.—The increased tenderness over the seat of inflammation obliged the patient to lie with her legs drawn up.

After this, violent spasmodic pains of the abdomen supervened from time to time; these were relieved by opiate suppositories, and the bowels regulated, as indicated, by enemata chiefly. On the 4th of April another rigor occurred, and obscure fluctuation was perceptible at the abdominal surface. Mr. de Morgan now saw the patient, but decided not to open the abscess at present, suspecting that adhesion had not yet taken place between the abscess and the walls of the abdomen.

April 13th.—Much constitutional disturbance—viz., prostration, sweating, diarrhœa, vomiting—now appearing, it was not thought advisable to delay longer the opening of the abscess, so Mr. Morgan, the house-surgeon, operated, and discharged four ounces of offensive pus; more flowed afterwards into the poultice.

14th.—Prostrate; wound discharging, but not copiously. Ordered, brandy, two ounces; wine, four ounces; quinine, and as much nourishment as can be taken.

17th.—Diarrhœa returned, which was easily checked. The wound is healed; considerable hardness remains. Tincture of iodine to be painted over the affected part.

The patient steadily improved; the hardness gradually disappeared, and on April 26th she was discharged convalescent.

CASE 2.—Maria D——, aged thirty-six, married, admitted July 14th, 1863. Well formed and developed; hair and eyes dark-brown. Her father died at seventy-one of nasal polypus; mother living, of same age; brothers and sister healthy. Her former health has been good; has had seven children; was confined eleven weeks ago of a living child, delivered by the forceps. The child is reported to have been large. The patient was very weak afterwards, and did not leave her bed for a month. Lochia were very scanty. On sitting up she had a rigor, and was very feverish. Six leeches were then applied, which bled profusely.

*State on admission.*—Neck of uterus short; vagina very relaxed; discharge muco-purulent. A well-circumscribed enlargement, very painful to the touch, extends above the pubes to within two inches of the umbilicus. This enlargement is inferred to be the uterus, not involuted, with some inflammatory deposit in the surrounding cellular tissue. Ordered linseed poultice with laudanum to the abdomen; wine, three ounces of beef-tea, fish, and milk.

July 16th.—Much better; slept well; not in much pain. Continue remedies.

17th.—More pain; swelling larger, and tending to point at the abdominal surface. Much cough; little expectoration. Continue opiate and linseed poultice; five minims of Battley's sedative solution in linctus every six hours.

20th.—The swelling has become increasingly prominent near the linea alba, midway between the pubes and the navel, and was opened to-day by Mr. Lee, house-surgeon; half an ounce of pus came away. The opening was maintained by a lint tent.

On the following day half an ounce more of pus came away from the wound on dressing it. As the patient was sleepless last night, she was ordered half a grain of morphia at bedtime. Fish, as preferred by the patient; port wine.

23rd.—Perspiration too free. Brandy, two ounces daily; quinine.

The patient subsequently took steel with the quinine; improved daily; and on the 1st of August, being convalescent, she was forwarded to the institution at Walton.

CASE 3.—Mary R——, aged twenty-seven, admitted July 11th, 1863. Previous health good. Parents respectively aged sixty-five and sixty; healthy, as are also six brothers and two sisters. She has been married nine years, and had five children. Was confined eight weeks ago, the labour lasting but six hours. The placenta was retained, and required extraction, which gave her considerable pain. Twenty hours after delivery the patient ate a mutton chop and drank a glass of porter; and four hours later she felt great pain in the uterine region, and had vomiting and frontal headache; after this she had rigors, and has had pain in the uterine region ever since.

*State on admission.*—A fixed enlargement occupies the left iliac region, extending as high as the navel. She cannot lie on the left side, and has throbbing in the affected region. Skin moist; pulse small and weak; urine high-coloured, passed without difficulty; no enlargement nor induration felt per vaginam; os uteri open so as to admit the tip of the index finger; vagina moist, not hot. Ordered: iodide of potassium, three grains, with infusion of cinchona; wine, half an ounce; tincture of iodine externally over the affected part.

July 12th.—Pulse 142; much pain; bowels confined. Turpentine and warm-water injection gave the desired relief. Continue.

14th.—Much better; pulse 88. Continue.

15th.—Increase of pain in the left iliac region; countenance anxious; bowels costive. An enema was ordered, and ten grains of Dover's powder at night.

16th.—Much better; good sleep and appetite; bowels open. Continue.

17th.—Improving; swelling softer and less painful; bowels not open. To have a dose of castor oil.

The patient continued to improve, and was discharged convalescent on Aug. 25th, scarcely any trace of the enlargement being perceptible.

Other cases of inflammation of the cellular tissue adjacent to the uterus terminating in suppuration—which experience shows to be the most frequent event—appeared in the obstetric ward within the same period. They occurred, one of them two years after miscarriage, ever since which the patient alleged that she had never been well; the others in connexion with menstrual disorder, where the pus escaped by various outlets, as the rectum, vagina, and bladder; and in one the disease was associated with a fibrous tumour of the uterus of long standing. These patients were all discharged convalescent.

## ST. THOMAS'S HOSPITAL.

### MALIGNANT TUMOUR OF THE ORBIT ORIGINATING IN THE OS PLANUM OF THE ETHMOID BONE; REMOVAL.

(Under the care of Mr. SYDNEY JONES.)

HENRY D——, aged forty-eight, admitted in March, 1863. He stated that twelve months previously he had a severe fall, striking the nose and lower part of the forehead. Three months afterwards he observed a swelling about the size of a pea at the inner angle of the left orbit, causing slight projection of the upper eyelid. This swelling had been increasing rather rapidly in size, especially of late.

On admission a tumour presented itself at the inner angle of the left orbit, protruding the upper and lower eyelids. It showed a transverse depression in the situation of the tendo-oculi, having evidently been limited in its growth forwards by this ligamentous band. Above and below this the surface was rounded and somewhat nodulated. The part below was about the size of a small walnut, was movable, and could be traced backwards into the orbit; the upper part was smaller, less movable, and also to be traced into the orbit. The skin covering both portions was reddened, and showed turgidity of numerous small veins; in the neighbourhood of the tendo-oculi it seemed adherent to the surface of the tumour. There was no obstruction to the lachrymal sac; at all events there had never been sufficient to cause an overflow of tears. The tumour was considered as springing from the periosteum of the orbit, and as only slight displacement of the eyeball had occurred, it was probable that its connexion with the inner wall did not extend very far back. It was therefore determined to attempt its removal. One transverse incision was made above and another below the tendo-oculi, with the object, if possible, of detaching this structure from the surface of the tumour. This, however, was found impracticable, the tendo-oculi and neighbouring skin being infiltrated with morbid elements; so that the skin, which was very thin, was carefully dissected upwards and downwards from the two lobes, and the peduncle of the tumour traced backwards into the orbit. This peduncle took origin from the os planum of the ethmoid, from which it was without difficulty detached. The tumour passed backwards for about an inch between the inner wall of the orbit and the internal rectus, the latter structure, however, being quite free and uninvolved. The parts were subsequently brought together by wire sutures. No sloughing of the skin occurred, as was anticipated from its thinness. The parts healed up very rapidly. At first there was some little tendency to eversion of the lower lid; but by careful dressing this was corrected. The man left the hospital quite well. The action of the orbicularis and internal rectus was perfect, and there was no impediment to the flow of tears along the lachrymal canal.

The tumour was about the size of a large walnut, narrowing towards the peduncle, which was half an inch in diameter, and rendered bilobed by its relations with the tendo-oculi. Its section was soft, greyish, and fleshy-looking, and on scraping, yielded a thick creamy fluid, with a somewhat reddish tinge. Under the microscope this juice was made up of round nuclei, with a beautifully clear outline, each about the size of a blood-corpuscle, and containing one, two, or sometimes more, very distinct nucleoli. These forms were imbedded in a very delicate fibrous tissue. The naked eye and microscopical appearances, the rapidity of growth, and the infiltration of the tendo-oculi and neighbouring skin, seem to indicate the cancerous nature of the tumour.

The patient was seen early in July; no trace of return of the disease could be detected.

## WESTMINSTER HOSPITAL.

### CASE OF INJURY TO THE BRAIN BY CONTRE-COUP; INTRACRANIAL HÆMORRHAGE; DEATH IN TWELVE HOURS.

(Under the care of Mr. CHRISTOPHER HEATH.)

THE following is a good example of injury to the anterior part of the brain by a fall upon the occiput, the injury being thus the result of *contre-coup*. The smallness of the circle of injury and the minute aperture through which the blood exuded sufficiently account for the want of early symptoms and the time which elapsed before they set in. For the notes of the case we are indebted to Mr. Horridge, house-surgeon.

James G——, aged seventy, was admitted on the 25th ult., at nine P.M., with well-developed symptoms of compression of the brain. At three P.M. he was lifting a sack of coals in a cart, when he fell backwards from the cart, striking his head on the pavement. He was taken up insensible, but recovered in a few minutes and walked to the hospital, when he was found to have a slight scalp wound over the occiput, which was dressed. He went home and lay quietly down, no further notice being taken of him until the evening, when, finding him snoring deeply and unable to be roused, his friends brought him again to the hospital, and he was at once admitted.

Mr. Heath was sent for, and found him quite insensible, breathing stertorously, 28 per minute; pulse 56, and full; the right pupil dilated, the left contracted. The upper limbs were motionless, but he frequently drew up the legs. There was a small scalp wound over the occiput, but a probe did not find bare bone, much less any symptom of fracture, and there was no evidence of fracture in any part of the skull. A slight ecchymosis was present over the right malar bone. No operative interference being warranted, a drop of croton oil was put on the patient's tongue, and his urine was drawn off. He died at four o'clock on the following morning.

*Post mortem examination.*—The scalp wound was found not to have reached the bone; after carefully stripping off the scalp, no evidence of fracture could be found. On removing the calvaria no blood was found beneath it; but upon laying open the dura mater a very considerable clot was found in the cavity of the arachnoid, at the side of the anterior lobe of the brain on the right side. On removing the brain, this was found to extend on the base of the skull to the level of the tentorium. The dura mater was carefully examined, and, having been stripped off, the bone was carefully scrutinized to detect a fracture, but without result. On examining the right anterior lobe of the brain, blood was found to exude from a minute point on its surface; and upon cutting into the part, it was found to be infiltrated with blood to the depth of a quarter of an inch in a circle the size of a shilling; otherwise the brain was perfectly healthy.

## ST. GEORGE'S HOSPITAL.

### DISLOCATION OF THE HIP-JOINT IN A MAN AGED SIXTY-EIGHT YEARS, PRODUCED BY SLIGHT VIOLENCE; REDUCTION.

(Under the care of Mr. POLLOCK.)

THE age of the patient and the slight violence which produced the dislocation in the following case are the chief facts of interest. In the diagnosis between fracture of the thigh-bone and dislocation of the hip stress is always laid upon the age of the patient, the former commonly occurring in advanced life from slight and simple causes, whilst the latter is rare and more usually seen in younger and stronger persons. As form-

ing an exceptional instance, therefore, the following case will prove instructive to the pupil.

W. G——, aged sixty-eight, was admitted on June 19th, with a supposed injury to the right hip-joint. Two days previous, while sitting on a log of wood about a foot high with a child on his knee, he slipped over, falling on his right hip, and the child falling on him. When he rose he found that he had lost nearly all power over the right leg, and he was in very great pain.

When seen by Mr. Pollock, there was found to be shortening of the thigh for about three quarters of an inch. The foot was inverted. There was considerable motion of the thigh on the pelvis when the limb was moved on examination, but abduction was not obtainable. The head of the femur was evidently lodged in the sciatic notch. There was a great hollow below Poupart's ligament from the absence of the head of the femur in the acetabulum.

Under the influence of chloroform, and with the aid of palleys, the reduction was successful in a few minutes. The patient recovered without any drawback, and left the hospital on July 1st, able to walk comfortably.

## METROPOLITAN FREE HOSPITAL.

### TWO CASES OF CARCINOMATOUS TUMOUR OF THE LEFT BREAST SUBMITTED TO ABLATION; RECOVERY IN EACH CASE.

(Under the care of Mr. BORLASE CHILDS.)

THE notes of the two following cases have been forwarded to us for publication:—

Sarah H——, aged sixty-six, was admitted May 28th, 1863. She is tolerably healthy-looking, and has had ten children. Her mother died of cancer of the womb. The tumour made its appearance about ten months since without any apparent cause or pain. About four months ago the breast bled freely from the nipple. She complains of pain between the shoulders behind, but otherwise feels well. The tumour is in the left breast; it is about as large as a very small orange, hard, and slightly adherent to the skin. There is no induration in the axilla.

June 15th.—The patient being put under the influence of chloroform, Mr. Childs removed the tumour by an elliptical incision in the course of the fibres of the pectoralis. No vessels were tied, the edges of the wound were brought together by sutures and strapping, and the arm was fastened to the side. She was ordered a grain of opium at once, and to be repeated at night. In the course of the afternoon and following night considerable oozing took place, which was controlled by pressure.

19th.—Simple water-dressing was used.

22nd.—A little erysipelatous inflammation appeared round the wound, but was quickly got rid of by a light bread-poultice. Ordered, bark and ammonia, and wine.

July 23rd.—To-day the patient was discharged. Zinc ointment has been used for the last fortnight. The wound is quite closed, except in two places where there are exuberant granulations, which are touched with solid nitrate of silver occasionally.

Jane J——, aged fifty-five, was admitted June 15th, 1863. There is no history of cancer in her family. The tumour is in the left breast, and about the size of a walnut, hard, and perfectly movable. There is some slight glandular induration in the corresponding axilla. There is no history of accident. The tumour was first noticed accidentally about five months ago; that in the arm-pit about three months afterwards. General health good; aspect not cachectic, but she is very thin. She has had one child.

June 22nd.—Mr. Childs removed the tumour (the patient being under the effects of chloroform) by an oblique elliptical incision, and also the enlarged axillary gland. Both incisions were afterwards laid into one to facilitate tying some vessels. The edges of the wound were brought together with sutures and strapping, and the arm was fixed to the side. To have a grain of opium at once, and another at night.

The case went on without an unfavourable symptom till July 4th, when she left the hospital of her own accord, although recommended not to do so. The greater part of the wound had united by the first intention, but there was slight discharge from the axillary end of it.

# Provincial Hospital Reports.

## NEWCASTLE INFIRMARY.

### PARACENTESIS CAPITIS; AMPUTATION OF THE LEG; CARCINOMA OF THE LIP; FATTY TUMOUR OF THE NECK BEHIND AND ABOVE THE CLAVICLE.

(Under the care of Sir JOHN FIFE.)

ON the 2nd inst., through the courtesy of Mr. Annandale, one of the surgeons, we were shown over the infirmary at Newcastle, which has accommodation for 250 in-patients. The building is spacious, with some fine large wards, especially in the newer portion, and covers a considerable extent of ground. It is not surrounded by any houses, and has an extensive and tastily-laid-out garden in the rear for the use of convalescent patients. From its situation and command of fresh air, it ought to be one of the healthiest hospitals in the kingdom; but pyæmia and allied diseases are rife here at times, as well as elsewhere. The hospital possesses a valuable library and museum for the use of the pupils.

In company with Mr. Nunneley of Leeds, Mr. Wm. Turner, and others, the following operations were witnessed by us:—

A child three years of age, with a monstrously large head, the result of hydrocephalus, and presenting an appearance such as is seen in some of our museums, was tapped with a small trocar by Sir John Fife, and some eight or ten fluid ounces of colourless, limpid, watery-looking serum withdrawn. Although this appeared to afford relief, it was not followed by such an amount of reduction in the size of the head as was anticipated; and this depended, as Sir John remarked, upon the partial ossification of some of the sutures of the skull. A slight compress of lint was placed over the wound, and the head firmly yet gently bandaged. The size of the child's head was equal to twice that of an adult's. We should be glad to know the result of the operation in this case, for the experience of it in the various London hospitals is by no means satisfactory.

Amputation of the left leg at its lower third was now performed for extensive disease of the tarsus, which was of a strumous character, in a delicate-looking young man. Chloroform was administered by placing a single fold of lint over the nose and mouth, and then dropping the anæsthetic upon it. Insensibility was produced in about nine or ten minutes; but as the integuments were not oiled beforehand, the skin was reddened from contact with the chloroform. This method, although it has its inconveniences, is certainly superior to many others in use. With a good inhaler, or even a common linen handkerchief, anæsthesia is frequently induced in from four to six minutes, as we have seen scores of times. The plan in use at Newcastle is worthy of trial at some of our hospitals, those especially where lint and oil-silk are used, and where the time taken to produce insensibility is oftentimes half an hour or more.

Carcinoma of the lip, in an old man, was removed by a V incision, and the wound closed by hare-lip pins. Chloroform was not given.

The fourth operation was the removal of a simple fatty tumour from a most unusual situation in a healthy man—namely, in the hollow above and behind the inner half of the right clavicle. This Sir John Fife accomplished without any difficulty, because of the superficial situation of the tumour, which was immediately beneath the integuments. At first sight the swelling most strongly simulated a subclavian aneurism; but the diagnosis was extremely facile. The tumour did not appear to cause any uneasiness, and had existed for some years. Chloroform was not administered to the patient.

# Reviews and Notices of Books.

*Mentone in its Medical Aspect.* Being Letters addressed to a Medical Friend, by JAMES LEWIS SIORDET, M.B. Lond., &c. pp. 111. London: Churchill.

DR. SIORDET'S little book, though not adding anything particular to what we have already learned from the writings of Dr. Bennet and Mr. Price upon the climate of Mentone, may be recommended as containing, in a very small space, some of

the chief points which intending tourists desire to be clear upon. The author's opinion of this new place of resort may be gleaned from the following:—

"Too much stress has, perhaps, been laid on the excellence of the winter climate of Mentone, and the expectations of the visitors have thereby been unduly raised. No greater mistake could be made than to expect here perpetual sunshine and a perfectly equable temperature. A certain number of rainy, cloudy, and windy days do occur, as my weather-table shows; and a moderate amount of cold must be anticipated and provided for. On the whole, I consider the climate to be rather dry; but this quality is moderated by the sea-breezes, which bring with them a certain amount of moisture. From November to March it is decidedly bracing without being stimulating, except to some few unfavourable cases, more especially when they reside in the immediate proximity of the sea. ..... Several weeks' residence is required before one can really appreciate all the advantages of the climate; and ere the time comes for leaving Mentone, few there are who remain discontented. The bad weather seldom endures more than three or four days at a spell; the sun soon bursts out anew in all its glory and warmth, and, from its temporary absence, is the more grateful when it does return. These atmospheric vicissitudes are trying at the time to the spirits, and demand of course greater precautions from the invalid; but experience shows that they really need not be, with such precautions, injurious to health. ..... Mentone offers most of the characteristics required to constitute a really good winter climate,—namely: generally bright sunshiny weather, allowing of daily exercise in the open air; a moderate amount of rainy days; no very great amount of cold; a moderate daily range of temperature; and an almost complete exemption from winds from the north, north-east, and north-west, which are the coldest winds in Europe. Added to this is the important consideration that a cheerful influence cannot fail to be exerted on the minds of invalids by the beautiful scenery around us, with its refreshing evergreen vegetation. There is one negative feature which, in my opinion, ought to be held amongst its greatest advantages,—namely, that no endemic disease whatever exists in the district; therefore persons who come here to get rid of one affection have not, as in so many other places of winter resort, to dread, in exchange, the accession of fevers, dysentery, or diarrhœa."—p. 13.

As Dr. Siordet's book may be put almost in a waistcoat pocket, we shall not be accused of adding much to the already existing *impedimenta* of the traveller by the recommendation to possess it.

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*An Analysis of the Human Mind.* By RICHARD PEARSON. pp. 127. London: Macintosh.

THIS work differs, as its author tells us, "in almost every important point of mental science" from the treatises which have preceded it:—

"The whole difference depends on one original feature in the system—namely, the classification of mental action and its connexion and dependence. This may be said to be the keystone of mental science. Let mental action be correctly classified, and let its mutual connexion and dependence be determined, and every other important doctrine of the mind may be deduced from it."—p. 3.

In the author's system mental action is arranged under three heads—namely, thinking, feeling, and retention. To one or other of these divisions any form of mental action is made to belong, if the act be simple; if compound, it must be made up of them. The views expressed as to the nature of the will and conscience are deduced from the division of psychical action already named.

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*Weiss's Catalogue of Surgical Instruments &c.* London: John Weiss, Strand.

IT is remarkable, considering the great beauty, variety, and excellence of our English instruments, that the principal makers have left us so long without an adequate pictorial catalogue of the most valuable and frequently-used arms of the surgeon. The older catalogues of Weiss and of Savigny and Co. have long since been out of date and out of print; and when we recently undertook the task of reviewing the state of the art in respect to its instrumental resources on the occasion of the last International Exhibition, we found that they were wholly useless for any other than merely traditional purposes, and gave no notion of the actual models in use.

Messrs. Weiss and Son have filled this void by a very handsomely and liberally illustrated volume, in which are shown nearly all the surgical instruments, apparatus, and appliances manufactured by them. This includes a very wide range indeed; for it is rare that a surgical instrument maker registers any improvement, being more commonly contented with the credit of attaching his name to any given improvement.

This catalogue has many and great merits. It is modest, truthful, carefully arranged, and extremely well illustrated. In the great majority of cases the name of the surgeon is appended to the modification which he has introduced, and frequently other makers' names are honourably attached to instruments which they first originated. These are large principles of honour which we are glad to see strictly observed in this catalogue. Until lately not every maker has been prompt to do credit to the surgeons whose ideas he carried out. We recently had occasion warmly to support the Surgical Instrument Committee of the International Exhibition in their reference to this matter; and we are glad that in the present catalogue "that which is Cæsar's is rendered unto Cæsar." It is unnecessary to review this book in detail, having so lately gone through the subject minutely in connexion with the Great Exhibition. The ingenuity, mechanical ability, and thoroughly workmanlike finish which distinguish the instruments of the authors of the catalogue are known to all, and have long placed them in the first rank. The present catalogue will be a handy guide to surgeons, especially those in the provinces or not in immediate communication with the London depôts, as showing the most approved forms of instruments for every operation in surgery.

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*The Arts of Writing, Reading, and Speaking.* By EDWARD W. COX, Recorder of Falmouth, &c.

THOUGH this work is more particularly addressed to law students, it is not unworthy the attention of those who are destined to the medical profession. There can be no question in the present day that the attainment of the arts of writing, reading, and speaking must be of great service to many of our brethren. More particularly is this the case with regard to writing. The great fault of the composition of medical practitioners is prolixity. In a science like Medicine, succinctness of style and terseness of expression are too often lost sight of. It is a mistake to suppose that the value of a communication to medical literature is in proportion to its length. Brevity is not only the soul of wit, but often the chief charm of writing, whether the subject be medical or otherwise. The great masters of English composition have been celebrated not for the diffuseness but for the vigour of their style. Cobbett, than whom no one was better acquainted with the English language, reprobated long sentences and parenthetical composition. Sir Samuel Romilly was in the habit of saying that even in a prolix chancery suit no advocate was justified in taking up the time of the court for more than twenty minutes. This may be, perhaps, an exaggerated opinion. In our own profession, however, a system has of late prevailed with respect to writing which tends to the opposite extreme. We commend Mr. Cox's valuable and suggestive volume to the attention of our readers.

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TESTIMONIAL TO SIR JOHN GRAY.—The exertions of Dr. Gray in promoting the sanitary improvement of the city of Dublin were acknowledged by the Government bestowing on him the honour of knighthood, which was gazetted July 23. The citizens of Dublin have now testified their approval of his services by presenting him a magnificent candelabrum and epergnes. Many of the subscribers were most active opponents of the measures he proposed and successfully carried out, yet they cheerfully bore testimony to the zeal and disinterestedness with which he prosecuted the task he had set before him.

# THE LANCET.

LONDON: SATURDAY, SEPTEMBER 12, 1863.


UP to the time when Professor OWEN began to take a prominent position amongst us, almost nothing had been done for embryology by British anatomists. The Curatorship of the Hunterian Museum, and the Professorship annexed, supplied the talented and eloquent Hunterian Professor with immense stores of material for anatomical study, and he became so early opulent in anatomical science as to make him the wonder and envy of his age. He set himself to reduce to order this embarrassing wealth of disorderly knowledge, and propounded his hypothesis of the Archetype and Homologies of the Vertebral Skeleton, which OKEN and GOETHE had, with the intuition of genius, already imperfectly foreshadowed. This theory seemed to be destined to stand, for all future anatomists and naturalists to wonder at and to admire. But this idol has met with its iconoclasts, and there are now not wanting some to declare that, like the image in the Eastern king's dream, it was made up of discordant materials: its head and face were of fine gold, but its feet were part of iron and part of miry clay—partly strong and partly broken. More than a quarter of a century ago those great embryologists, RATHKE and REICHERT, had discovered in the development of the skull and face of the vertebrate animal facts which, as interpreted by such men as GOODSIR and HUXLEY, are opposed to the vertebral theory of the skull and the rib theory of the facial arches. It is five years since this matter was fairly put upon its wheels: this was done when Professor HUXLEY delivered his Croonian Lecture at the Royal Society.

We all know that the segmentation of the body of the embryo into the so-called primary vertebræ or somatomes, is essential to the production of a true vertebral column. The little square patches of thickened tissue which appear on each side of the notochord are the rudiments of the body-segments; the articular interspaces of the rudimentary vertebral centres correspond with the middle of each of these masses, whilst the metasomatomes, or interspaces between these masses, correspond with the middle of each of the rudimentary vertebral centra. Now this segmentation ceases when we reach the occiput; there is no intercentrum in front of that which comes between the occipital condyles and the atlas; the pointed end of the notochord becomes invested with cartilage, and then with bone, this bony substance being the rudiment of the basi-occipital; but the cartilage in front of the occipital foramen is never segmented. The segmentation of the spinal column is primordial and necessary, whilst the segmentation of the skull is not even secondary; it is tertiary, and only takes place in the third histological stage. In many fishes it does not take place at all—a fact that the late lamented HUGH MILLER used to lay great stress upon; and when this slow and subsequent jointing of the parts in front of the occiput does take place, it is much unlike the formation of vertebræ. Then as to the rib theory of the facial arches, that is just in the same predicament. They can be imagined to be the same; but the study of the development of the parts pulls everything down about the ears of the theorizer. Professor OWEN considered that the two first post-stomal arches of the face of the fish were the true serial homologues of the chest arches. The succeeding arches—those bearing the gills—he placed in his splanchno-skeletal category. In the embryo, however, these are all one series; the mandibular, the hyoid, and the branchial arches are as much true serial homologues of each other as our chest arches are. But to find a pleurapophysis, a hæmapophysis, and a hæmal spine in each of the jointed rods which bound the branchial slits is to dally with fancy, and to be oblivious of facts. This large system of visceral arches coexists in the fish with true ribs, and behind the occiput the branchial arches refuse to conform to the proper divisions of the body, as may be well seen in the cartilaginous fishes, both high and low,—e. g., the sharks and lampreys. Then those appendages which Professor OWEN considers to be arrested fins or limbs,—viz., the opercular and branchiostegal rays, these are continued in the sharks all along the numerous branchial arches; whilst the pectoral fins are seen in them to have nothing whatever in common with these gill-cover pieces.

As a rule, in osseous fishes the pectoral arch is swung from the occiput; but this is quite exceptional in the vertebrata generally, and two dozen vertebræ intervene between the head and the *atlantal* members in the swan; yet in that creature there has been no displacement: the shoulder girdle, with its appended limbs, is in relation with the very same body-segments in the adult as in the embryo. The gravest difficulties turn up in the jaws; in the "archetype" the developed incus is, in the ovipara, made to be the *actual homologue* of the human "annulus tympanicus," and the serial homologue of the ribs. It is quietly turned over to the frontal or prosencephalic segment of the head, although it always lies beneath and behind the parietal or mesencephalic segment. This big incus—the os quadratum—always is attached primarily to the periotic capsule, and secondarily to the auditory roof-bone, or squamosal, in such a manner that the great trigeminal nerve passes out of the foramen ovale in front of it. If there had been no wedging in of a large and complex sense-capsule between the occipital and post-sphenoidal segments, then probably the mandibular arch would have been attached to the corresponding edges of the ali-sphenoid and the ex-occipital; nothing would have given it a prosencephalic fixing. In the archetype theory, the *composition* of the oviparous mandible is turned over to the tender mercies of a semi-theological teleology; and what homology fails to explain, the law of adaptation to final purpose must reveal. But no severely philosophical mind will allow that sort of see-sawing between law and law; and if the anatomist has not found out the meaning of the successive morphological processes by which this arch came to be composed of many pieces, he had better say so, for we have been put off too often with "it is so because it is good for it to be so." It may sound well to say that the human dentary bone is a hæmapophysis connate with one moiety of a divided hæmal spine. But where in the whole series of vertebrata is there such a thing as an essential sternal rib and half-sternal piece formed as a perichondrial splint on a free descending rod of cartilage? The maxillary is in the same dilemma; it also is a mere membrane bone, formed as a splint on the pterygo-palatine arcade, on the process which has developed from the front of the incus in the maxillary rudiment of the embryo. Fortunately for the maxillary, it can be eked out with the pre-

maxilla, which forms for it a hæmal spine; whilst, according to the archetype theory, the palatine is a rib, and the pterygoid is a hidden limb to this inferior arch of the rhinencephalic or most anterior cranial segment.

But we cannot now go further into details. The followers of the new light tell us that the choice is between system-building and the work of pure observation. The sky will not fall upon those anatomists who choose to study the beautiful processes of development and refuse to follow the pleasant but flickering light of transcendentalism; and to all, the recent Lectures of Prof. HUXLEY will be of the highest value. He has shown us how much may be done by the anatomical method alone in determining "part for part, and bone for bone," even when the stride has been direct from man to the pike. But the determination of special homologies by the study of development will give us assured verities, and our science will be safe and sound. It is in its infancy, however, at present: the field is white, but the labourers are too few to reap it. In our country, and perhaps all others, studies of this sort have the remotest relation to that *bread-study* which is so important to most of us; and unless a man be ready to "scorn delights and live laborious days," he will reap but little of this precious crop. Perhaps, however, now that the way has been fairly opened by the present highly-talented Hunterian Professor, we shall have more done in this way than we have even hoped for; certain it is, that the reward of such labour will be great, and the joy of the workers "will be as the joy of harvest, and as men rejoice when they divide the spoil."

In presenting these Lectures to the profession, we have put them in a position fully to appreciate the views which are likely to alter in an important degree the aspect of anatomical science throughout Europe. We cannot but give a word of parting commendation to those who have enabled us to put them in a more perfect form than such Lectures were, we believe, ever presented to the reader. Not only are they a triumph of the art of reporting, but the accuracy and beauty of the drawings (notwithstanding the rapidity with which they were executed) made for our woodcuts from the temporary slate sketches of the Lecturer, are in the highest degree honourable to the scientific and learned artist to whose knowledge and zeal they are due. Only one man, probably, in the country could have combined so many various qualifications and so much anatomical skill as were necessary for the task; and by rendering permanent Prof. HUXLEY's fleeting diagrams he has greatly enhanced the value of this important course. These Lectures will form an epoch in anatomical science. We trust that in presenting them thus perfectly to so large a body of cultivated readers we may have done something to foster the progress of science and the love of truth.

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AGAIN is public attention aroused to the consideration of a question imperiously demanding a settlement. Morality and health appeal in language that cannot be misunderstood when proclaiming the social evil, which so extensively prevails, not only in our metropolis, but also in many large cities throughout the kingdom. Facts are sadly significant arguments when they rest on the enumeration of the vices or follies of our fellow-creatures. Illustrations drawn from the disease or degradation of the fallen and friendless ought, in the opinion of many, to be permitted to rest in the shade. In our view it is but a spurious modesty which is abashed by their contemplation, or avoids the responsibility of their discussion, so long as either may suggest means for the abatement, if not remedy, of what is at present a public misfortune, and fast becoming a national disgrace. It is obvious that immorality is assuming a proportion so vast and unmistakable, that the Government ought no longer to shrink from its recognition. Once recognised there is but the alternative of its prevention or regulation. We best express the present condition of legislation on the subject by the term indifference. So long as harlotry is silent, if not secret, it may continue uninterruptedly in its course. Should, however, extraordinary attention be attracted to any particular locality, by reason of the number of its gay residents, it needs but an influential householder to invoke the aid of the parish authorities, and the general migration of the offenders follows. Occasionally spasmodic propriety induces a vestry to regard with special severity a particular district, and thereby ensure additional misery to its *habitudes* without diminishing their number or capacity for evil. There seems ever present on the part of the public a reciprocal deception in reference to its recognition of a social condition universally admitted. All desire to avoid contact with the moral leprosy infecting our highways. Few have the courage to specially interest themselves in the present or future of those whom society places under its ban, much less to demand on their behalf a dispassionate investigation of the causes which have resulted in, and the circumstances that contribute to maintain, their position. Without a complete acquaintance with these details, all efforts for their prevention or remedy must prove inoperative. We have before alluded to this subject. Its moral and medical aspects are so closely interwoven, that it is impossible to treat the one and disregard the other. We have no desire to assume the deeply responsible position of public instructors on matters of public conduct further than our medical duties would warrant. All that experience and forcible argument could suggest has already been urged in those remonstrances and reproofs, those warnings and exhortations which have repeatedly found expression in the daily press. We can but confirm their teaching. Medical men have more or less of a sad experience in such matters. Few practices are without special examples of the operation of causes which conduce to, if they do not constitute the main source of, that vice at present so widespread and undisguised. These causes are chiefly of a social character. The immense number of female operatives who resort to the metropolis, the precarious character of their employment, the disheartening and oppressive system pursued in the regulation of their work, the varying and inadequate remuneration they receive, the necessity of their traversing the streets at unsuitable hours, the facilities the city affords for unrestrained intercourse and companionship, and the uncomfortable condition of their homes, combine to render many too willing to exchange the persistent weariness of honest toil for an ephemeral indulgence in disreputable ease. The position of the male population is unfortunately in unison with that of their sisterhood. For the most part they are better provided for. Tens of thousands find employment with stipends sufficient to induce a taste for expense, yet not enough to enable them to "settle down." The day seems gone by when disciplined economy rendered firesides happy on moderate means. Thrift now implies poverty; and to be poor is no longer to be respectable. The man of income

lives up to it. His pleasures are selfish. He avoids matrimony as compromising, yet finds its enjoyments in transient associations with many whose evenings are disengaged. Assignations and intrigue are part of an accepted *morale* which we were wont to attribute to warmer climes: we are now proficients in both. Public amusements have adapted themselves to this altered condition. Concert-halls with thrilling performances, casinos with brilliant decorations, sensation exhibitions of one kind or another, admit of that free association congenial to such conventional relations. Companionship with those who resort thereto is no longer disreputable, but excusable. Strangers continually passing through our city frequent such entertainments with eagerness, and remember them with regret.

Without too minutely investigating the proportionate influence of any particular cause, we may proceed to a consideration of the results. These include a vast amount of prostitution and debasement, a terrible increase in the number of the worst crimes, and a fearful extension of specific disease. There is no disguising the truth that these results hold a certain correlation to each other, and that together they constitute a condition of society little consonant with that reputation which has hitherto been the boast of England. What, under such circumstances, is best to be done? This is the great question of the day. Its practical importance has found expression in the laments of Belgravian mothers, in the disappointment and bitterness of long-delayed unions, in the exhausted energies of youth and that premature impotency which anticipates years. Marriage seems the *roué's* last resort, as a mistress was his first ambition. Society's toleration of the latter thereby reacts, and is thus avenged. Let us look beyond this. Infanticide has within the last few years attained a magnitude fearful to contemplate. Public indignation no longer attends the destruction of infant life. It is by a certain class considered a misfortune rather than a crime, the necessity for which has arisen through negligence in consulting, or want of success in using the remedies of, many who so extensively advertise their capability of removing "all female irregularities, and preserving secrecy." The infants born and destroyed bear but a small proportion to those prematurely disposed of by the advertising quacks whose handbills pollute the pure and encourage the vile. The mischief does not stop here. Sensuality and excess imply idleness and expense; to gratify both leads many to rob and commit other crimes which complete their ruin and disgrace. We might enlarge on these phases of the current evil. Society knows and admits their existence, and yet is passive respecting them. True, when any startling circumstance arises, there ensues a shortlived enthusiasm on the matter. "A melancholy suicide" of some heart-broken wanderer directs attention to the *misérables* of our streets. Midnight meetings atone for previous indifference. The fashionable conscience languidly resolves to offer a means of reform to unfortunates. A new excitement arises. The matter makes little way; and it may be that a season inaugurated by repudiation of the vices and follies which prevail is, after its due excesses, concluded by a fête at Cremorne. That which religion has failed to achieve, or honour to dictate, self-interest or fear may accomplish, in inducing an active interference on the part of the State for the REGULATION of our social system. We use the term we consider most comprehensive. Government regulation implies control and limitation as far as executive efforts permit. We are aware that the subject is a difficult and a delicate one. Thousands of women, the majority of whom are diseased, infest our streets; young girls, nay children, accompany them. Public morality and public health call loudly for protection. Public safety demands measures respecting them. It is unnecessary to descend to statistics in confirmation of facts each thoroughfare proclaims and our hospitals illustrate. It may be accepted as a truth that specific disease acquired or transmitted has infected a very large proportion of our male population—that its consequences are perpetually being manifested in the acute suffering or chronic complaining of many. Inmates of institutions, their family become burdens on the parish; or, if possessing such strength as enables them to partially work, those whom they are presumed to support alternate between incomplete starvation and absolute dependence on public charity. The sins of the fathers stand proclaimed in the offspring. Sickly wretched children are everywhere to be seen. From whatever aspect this question be regarded, it presents revolting peculiarities. As a matter of yearly expenditure it appeals to the pocket, and asks that self-interest may give a practical direction to suggestions which the experience of other countries as well as our own supplies. Continental reports assure us that attempts to entirely prevent this public licentiousness have eventuated in an increase of clandestine debauch with all its sad results, and a closure of admitted reception-rooms has led to the extension and greater severity of disease. Recognition and regulation of those unfortunates have been found the best preventives against the ill-consequences of their condition, as well as the most effective measures for their limitation. Foreign Governments accept as an inevitable misfortune the condition of society which exists. They do not create, but guide, circumstances. Occurrences they cannot prevent they endeavour to control. Public women are obliged to reside in houses under perpetual surveillance, whose owners are responsible for their support and answerable for their conduct. Submitted to periodical inspection, and subject to numerous restrictions while continuing an immoral life, they have every inducement to seek a less degraded position. The result is that which might be anticipated. Those whom circumstances lead into a career of debauchery are safe from the utter wretchedness of being altogether uncared for; while an outlet is ever present for each one who desires to abandon such a course of life. We seek not to have the continental systems in their entirety: we quote them as eminently suggestive of what legislation can accomplish. It will be replied, English feeling revolts against the adoption of such a plan as regulation. "It publicly recognises immorality as an institution," argues one. True, it assumes as inevitable that which is—that which experience shows laws have ever failed to prevent, and it "scotches" where it cannot kill the snake. "It is un-English," urges another. True, all crime is un-English,—at least we are proud to think so,—and yet crime exists; all vice is un-English, and yet this is vice! Do those who speak thus ever ask themselves—Is it English to admit the existence of a great evil and tolerate all its enormities through a fear of being misunderstood in the application of its remedy? Is it English to see the young wither and the robust decay, families degenerate, and individuals fester off the earth, through disease within the power of the Executive to control? "The liberty of the subject must not be invaded!" This is the last and weakest of arguments. Alas! in the name of

Liberty what atrocities are not perpetrated! Licentiousness laughs at Religion and defies Law when the sacred name of Liberty is used as the pass-word of Crime. It is time that this national sentimentalism cease, and that we regard matters as they are.

We have already directed attention to this question so far as it relates to the management of our troops. We then pointed out the result of the plan which had been pursued in Portsmouth, and urged its adoption in garrison towns and camps generally. We have shown that, as a matter of public economics, the saving of a considerable sum of money is involved, while its operation on the physical condition of the men cannot be too highly estimated. Since our observations *The Times* has had many communications on the subject, which confirm the views we advocated. If the adoption of a particular plan be beneficial in one part of England, what is to prevent similar good results in another? The truth must be spoken. We have permitted the evil to assume proportions which now appal us by their immensity. We worshiped an idol of self-sustained morality, and find its head of brass and feet of clay are, when the necessity arises, impotent in our behalf. It is folly to shut our eyes any longer. The enemy is in the heart of our city: disease and its attendant miseries knock at our very doors. We ask not for hasty or ill-advised legislation on this important subject. Let the Government take the matter in hand. A commission numbering practical men might satisfy themselves as to the statements we have set forth. We do not hesitate to affirm that the more thoroughly the matter be investigated the more clearly will it be manifest that neither on the plea of morality nor public expediency will the State be longer warranted in continuing its indifference on this gravely important question.

THE Medical Officers of the Indian Service are subscribing with the object of presenting their late Director-General (Dr. FORSYTH) with a testimonial on his retirement; and reports from India say that the subscription will be a very handsome one. It is understood to be chiefly due to the untiring efforts of Dr. FORSYTH that the scale of pay and retirement is so liberal as it is in the new Indian Medical Staff Warrant. The probable effect of the separation of the Army Medical Department into two branches—one for general service, the other for Indian service only—is actively discussed, both in India and at home. There was always in India a certain amount of jealousy between the Company's and Queen's officers, because of the contrast that existed in the comparatively low rates of pay and allowances of the latter and the high remuneration attached to the civil and staff appointments held by the former. Now, had the amalgamation been effected, all grounds for the jealousy would have been removed for the future; the valuable staff appointments, and the opportunities for lucrative practice attached to them, would have become so many prizes open to the Army Medical Department at large. On the other hand, it must be acknowledged that the difficulty of effecting amalgamation, consistently with an equitable adjustment of existing interests, was very great. The difficulty was understood to be increased by a desire in certain quarters to make all the medical appointments in India, like a certain proportion of the combatant staff appointments, only tenable for five years. The effort to accomplish a system of this sort would, no doubt, be dictated by the motive that the number of officers sharing in the beneficial salaries of the appointments should be as great as possible; but had it been carried out, it would have been as fatal to the usefulness of some of the most important Presidency offices—such as those connected with the medical colleges—as it would have been injurious to the individuals holding them. It must not be forgotten that the greater part of the private practice in India is still in the hands of the Indian army medical officers, and that they fill all the chief positions in the professional educational establishments, and a variety of other posts which in this country are held by civilians.

# Medical Annotations.

"Ne quid nimis."

## SARTORIAL HYGIENICS.

HERR TEUFELSDRÖCKH, profoundest of philosophers and professors! has affirmed that the fundamental conception of clothing is æsthetical, not utilitarian. The pervading Idea of all our habilatory endeavours is architectural. Man's "body and the cloth are the site and materials whereon and whereby his beautified edifice, of a person, is to be built." The architectonic character of the Idea is to be distinguished even in that later Parisian or Anglo-dandiacal development which has led to the individual being girthed in separate sections, and put forth to the world "an agglomeration of four limbs." A recognition of the Idea is essential to a just scientific appreciation of Vesture. Science was at fault, indeed, until Herr Teufelsdröckh's immortal work, "Die Kleider, ihr Werden und Wirken," came from the now famous shelves of Stillschweigen und Co., Weissnichtwo. "Man's whole life and environment have been laid open and elucidated," observes the great editor of the learned professor's life and opinions, with pathetical force; "scarcely a fragment or fibre of his soul, body, and possessions but has been probed, dissected, distilled, desiccated, and scientifically decomposed; our spiritual faculties, of which it appears there are not a few, have their Stewarts, Cousins, Royer Collards; every cellular, vascular, muscular tissue glories in its Lawrences, Magendies, Bichats. How, then, comes it, may the reflective mind repeat, that the grand tissue of all tissues, the only real tissue, should have been quite overlooked by science—the vestural tissue, namely, of woollen or other cloth, which man's soul wears as its outmost wrappage and over-all, wherein his whole faculties work, his whole self lives, moves, and has its being?"

An error of conception, which the genius of Teufelsdröckh alone could remove, lies at the root of this great hiatus in the history of the sciences of organization. Even still, absence of a just appreciation of the learned professor's transcendental excogitations has prevented this deplorable gap from being filled up. There have not been wanting nascent sartorial Lawrences, Magendies, and Bichats; but their efforts to develop a true science of clothing, lacking the inspiration of a Teufelsdröckh, have invariably sunk into mute, inglorious nothingness. Approaching the subject with that myriad-powered microscopic habit of research which distinguishes the modern observer, they have become bewildered with multitudinous details, and lost sight of the great Idea which informs the whole. Again, there have not been wanting—and, alas! there still exist—abortive Teufelsdröckhs, who, regarding only the great connecting Idea, hold in contempt subsidiary details. In other words, the scientific student, fixing his mind too closely on the individual worth of his discoveries, and seeking with too great avidity to utilize them, to the neglect of the æsthetical element which should pervade all vestural developments, has too commonly given birth to habilatory monstro-

sities; while the æsthetical student—after the fashion of architectural scholars generally, who chiefly concern themselves with the external aspect—has devoted himself to the beautifying of the person, to the neglect too commonly of utility or comfort, health or propriety. It is only by a just combination of the æsthetical and the utilitarian that a true science of clothing will ever be attained, and all our sartorial blunders have arisen, and still arise, from the disregard of this great truth.

This is most apparent when the habiliments of organized bodies of men are contemplated. Whatever errors are conspicuous in the dress of the army and the volunteer force may be traced mainly to a neglect of those hygienic considerations suggested by the duties peculiar to the soldier and the volunteer. The former is sacrificed to decorative sartorial effects; the latter has too commonly sacrificed himself by adopting an attire which is but a mongrel version of the dress of the soldier of the Line, lacking the relief derived from brilliancy of colour and ornamentation, and equally unsuited for active service in the field. What can be more lamentable, from an æsthetical point of view, than a volunteer regiment composed of the long and the short, the meagre and the stout, the angular and the rounded, clad in tight-fitting tunics and straight cut trousers? Fitted only for the well-formed, no dress more fully brings into prominence all the ugliness of the ill-formed; dependent upon the integrity of the stiff lines originally devised and set up by the tailor, and not on easily and gracefully flowing folds, for such beauty as it possesses, none is more unsuited for the rough wear and tear of campaigning. That complete diffusion of body and limbs on the ground which is a necessity of proper rest after marching or fighting is an impossibility while the body and extremities are so tightly girthed; and comfort in squatting on the hams or kneeling is to be obtained only by reckless indifference to the original formation and integrity of the inexpressibles. It needs but a glance at the condition of dress of the regular soldier off duty at nightfall, in the field, in camp, or in barracks, to see that the tight-fitting tunic and straight-cut trousers were devised only for the erect position. Every button unloosed, to secure some degree of freedom to his limbs, he is the very antithesis of the orderly, well-set locomotive uniform which most gratifies the eyes of the martinet. The loose jacket with which the soldier is permitted to indue himself in the intervals of duty is not merely a hygienic requisite, but it is also necessary as a preventive of mutiny.

Previous to the Crimean war, the soldier, sartorially regarded, was simply looked upon as a tailor's block, and not as a living, sentient being. It was anticipated that the inquiries of the Royal Commission of 1857 on the Sanitary State of the Army would give the *coup de grâce* to this perverted notion. Certainly they led to the excision of that portentous decoration and illimitable expenditure of braid and gaudy worsteds which had previously constituted the highest expression of military æsthetics. But the great principle by which the Commission sought to ballast the sartorial vagaries of the Horse Guards has proved far less effective than was to have been desired. "Too much importance," said the Commission, "cannot be attached to an easy adjustment of the clothing, so as to leave to the respiratory and other organs of the body, as well as to its muscular development, the utmost freedom." Six years have elapsed since this important opinion was enunciated, yet we find a recent committee of officers formed for the purpose of simplifying the equipment of the soldier occupied chiefly with the following questions: the substitution of a loose serge-jacket for the tight fitting and uncomfortable shell-jacket now in use for summer and ordinary field-days; the selection of a forage-cap of presentable aspect and comfortable for wear, the Kilmarnock cap in use being as difficult to "set up" and keep in order as starched linen, and when set up destructive of mental and cranial comfort; removing the useless hand-slash of the tunic, *and giving a larger and more comfortable sleeve!* Other alterations in dress and equipments are proposed, all tending to ease *somewhat* the bound-up limbs of the unhappy soldier. Is there no military Teufelsdröckh to show that ease and freedom, durability, and military smartness and handsomeness are not inconsistent with each other, and may be combined in one attractive whole?

The recent Royal Commission on the Indian Army approached the subject of dress with great diffidence. Admitting that there had been great improvements of late years, it gave a qualified approval to the present dress of the European soldier in the tropics, and limited its suggestions to the underclothing, the head-dress, and the boots. It urged that the use of a light flannel garment next the skin should be made imperative—an admirable suggestion if the texture of the material be such as not to make its adoption a torture. The form and structure of the boots were justly animadverted upon. The English gentleman's broad-soled, broad-toed, flat-heeled walking shoe or boot is the perfection of a covering for the foot, in form, ease, and utility. Why, then, should our soldiers be condemned to the present wretched, shapeless abortions of ammunition-boots? The head-dress, murderously perverted too often at home, is of pre-eminent importance in India. It would be impossible, probably, to suggest anything to surpass in ease, comfort, or elegance, a modification of the turban; but the conventional sartorial notions of the military mind seem to interpose an insuperable obstacle to its adoption. The wicker-work helmet now in use in India affords considerable protection to the head against the sun's rays; but several improvements are suggested by Mr. Julius Jeffreys, F.R.S., of the Bengal army, to which the Commission directs particular attention. "He proposes to make the outer shell of the helmet double, with a ventilated space between the layers, and within the shell there is a lining to fit tight to the head, leaving another ventilated space between the inner surface of the shell and the wearer's head. The object of the contrivance is to ensure the passage upwards of two distinct currents of heated air between the outer shell of the helmet and the head. In order to diminish the power of the outer shell to absorb the sun's rays, the inventor proposes to cover it with a thin, highly-polished metallic surface." The fatal objection to this helmet is its ungainly aspect.

It is a curious and somewhat inexplicable fact that Mr. Merret's ingenious "Ventilating Gusset" should not have received the attention of the Commission. The advantages proposed to be derived from this invention are best set forth in a report on an experimental trial made with it in the 7th Royal Fusiliers, stationed at Ferozepore. The commanding officer in his official report states that the gussets had the effect of preventing an accumulation of perspiration; they kept the parts they covered cool and clean; and they strengthened the garment. Few things are more obnoxious during active or protracted exercise in hot weather than profuse perspiration in the armpits, overheating and irritation of the cleft of the buttocks, and chafing of the upper part of the thighs. The remedying of these evils must be a boon to the civilian as well as the soldier. Many of the former have already certified to the efficacy of Mr. Merret's invention in bringing about this desirable result, and it is to be trusted that the military authorities will subject it to wide experiment with the latter.

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## THE HEALTH OF OUR ARMY AND NAVY.

WHETHER in civil or military life, the fearful mass of disease arising in this nation from the present uncontrolled indulgence in vice assumes dimensions so gigantic that we have long regarded it as the most portentous and ominous evil of the present times. One of the most able writers which our profession possesses, some years ago illustrated in these pages the whole force of this position with a power and eloquence which have not been rivalled in recent discussions of the question, in a series of articles to which we would now

refer those many earnest laymen who are at the present time holding up the banner then reared.* Every successive year adds new victims, and beholds the evil spreading more widely, infecting more deeply the constitutions of masses of the population, civil and military, and threatening more than any other thing to undermine the health of men who are the strength of the nation.

New inquiries add each additional facts, all tending to support the same conclusion, and cause equal grief and fear. The two great volumes just published by the Royal Commission appointed to inquire into the sanitary state of the Army in India teem with evidence of the enormous loss which this uncontrolled system of prostitution causes in our Indian forces. Dr. Macpherson, in his notes of a tour which he was making in 1859 with the Commander-in-Chief, says:—

"*En route* the Commander-in-Chief and I had many opportunities of discussing sanitary measures. We both witnessed with our own eyes the fatal mistakes of our forefathers both as to position and construction of barracks, the facilities with which the soldier is enabled to poison himself with deleterious liquors, the absence of all measures in the shape of preventives to disease, the utter want of hygiene generally, and, worst of all, the fearful ravages which that most loathsome malady *syphilis* is making amongst the troops, and the utter absence of measures to check its progress. In many instances we found that the same woman passed the poison on to several men; in others, although this woman is known to be in a diseased state, she has in the men's eyes some powerful attraction, and, heedless of consequences, they associate with her. Then as to the type of the malady, so destructive has it become that few who imbibe it *can hold on to the service beyond five or six years* from the date of inoculation. Before the primary symptoms are healed the secondary ones have set in, or extensive suppurating buboes with purulent infiltration of the surrounding tissues, a speedy loss of part of the organ from phagedænic sloughing. Then as to the extent, the prevailing diseases everywhere are syphilitic; and *fully two-thirds* of those who imbibe the disease, as I have already said, *are invalided within five years*, and are sent out of the service with a loathsome poison circulating in their veins, which passes down to their posterity. Is it not said that such a state of matters is permitted to exist? Now, however, that the Commander-in-Chief has been witness to it all, I hope that some steps will be taken to stay the progress of the evil. I have fully reported on the subject to the Director-General, and have urged on his notice this and other measures of sanitary reform."

From the Army Statistical Reports it appears that the annual admissions into hospital from venereal diseases amount to 206 in every 1000 Cavalry soldiers, 250 in the same number of Foot Guards, and 277 in every 1000 Infantry of the Line. The average proportion for the Army at home is 267 per 1000, or more than one-fourth of the whole number. It is calculated that on the lowest average each man is fifteen days under treatment. Thus 688 men out of the home force are always in hospital from this cause alone—a number equal, or nearly so, to the strength of a regiment on the home establishment; and the money loss to the State is calculated at nearly £14,500 a year. The further loss from subsequent disease and invaliding, and the injury to the State from the life-long deterioration of the individual and from the hereditary curses of transformed syphilis and scrofula conveyed to future generations, are beyond calculation.

In India the case appears worse than in England. The proportion of venereal cases constantly in hospital is usually from 20 to 25 per cent. of the total sick. At some of the larger stations it much exceeds this. At Bangalore and Roorkee the proportion at the time the report was made was 50 per cent.; at Dinapore it was as high as 53 per cent.; and Dr. Maclean testified that a few years ago in the 1st Madras Fusiliers the amount of syphilis was equivalent to the withdrawal from duty of one-fourth of a company daily.

We quoted lately the data collected by Mr. Acton to show how this scourge had been almost banished from the Belgian Army by the establishment of Lock Hospitals and the surveillance of public women. In a memorandum from the Director General of the Medical Department we find somewhat similar results achieved by the adoption of police regulations at Secundrabad. This statement is well worthy of careful attention, for it shows how a firm and intelligent man solved for himself in the Army over which he had the medical control the problem which apparently our principal sanitary authorities have not even ventured to approach. He writes:—

"The state of the 3rd European regiment soon after its arrival at Secundrabad early in 1855, then a young regiment scarcely formed, was such, from the number of cases in hospital of venereal, as to draw my especial attention to all the local circumstances connected with the propagation of this loathsome disease, which was ruining the constitutions of many young men, and laying the foundation in numbers for future invaliding and loss to the service. There were about 8 per cent. of cases in hospital in a strength not much more than 700. In the neighbourhood of the barracks numbers of native women were prowling about every evening, and the huts of many not far off. They were under no surveillance, and no means used to prevent disease. After some difficulty I got the brigadier to sanction the public women being taken up by the police, (where there was good reason to believe they were infected, as when pointed out by the men as the persons they got the disease *from*, &c.,) brought to the civil hospital, there examined, and, if diseased, kept in until cured. This measure was almost magical; the number of cases in hospital diminished almost at once to less than half, and soon after to still less; and it was soon found that as diligence was used in detecting and examining the women, &c., they decreased, and *vice versâ*."

Herein is summed up the whole philosophy of the question. Occupy the men's time—give them rational amusement, relaxation, soldiers' clubs, gymnasiums, and cricket; increase the number of married men, taking care to provide that you do not separate them from their wives,—and still you must fall back upon Lock Hospitals and police surveillance. What do clubs and cricket and recreation and libraries do to arrest this social evil in our towns? It is difficult to say. Certainly they are insufficient; and in camps they are not more powerful to check this plague. The Legislature should confer general powers on local authorities to pass rules for the prevention of the spread of venereal disease in large towns and encampments, with penalties for infraction. These might at first be confined to encampments, and garrison and seaport towns. It is only thus that this social plague can be arrested.

* THE LANCET, vol. ii., 1857, pp. 453, 478, 503.

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## JENNER ON VACCINE INOCULATION.

A SINGULAR pleasure may be derived from following the path by which some one of the great benefactors of his race has arrived at the results which have left mankind his perpetual debtors. To walk in his footsteps, to climb with him again the craggy steep, to walk with him through the mists of doubt, feeling the pleasant conviction that by his safe guidance we shall emerge into light,—this is the gratification which the discoverer of vaccination offers to the reader in his exquisite tract, "On the Origin of the Vaccine Inoculation." In that monograph, now rare and scarce, Jenner tells in simple, earnest, and beautiful words the whole story of his discovery: how, five-and-twenty years before, his attention was called to that "singular disease," the cow pox, by observing that those who had undergone it could not be inoculated; how that, on further investigating the subject, which, "like all others of a complex and intricate nature, presented many difficulties," he found "that some of those who *seemed to have undergone the cow-pox*, nevertheless, on inoculation with the small-pox, felt its influence just as if no disease had been communicated to them by the cow." This for a while damped but did not extinguish his ardour; for on further investigation he was led to distinguish between some varieties of spontaneous eruptions upon the teats of the cow—between *true* and *spurious* cow-pox. Next "an impediment

of far greater magnitude in its appearance started up;" for there were not wanting instances to prove that "when the true cow-pox broke out among the cattle at a dairy, a person who had milked an infected animal, and had thereby apparently gone through the disease in common with others, was sometimes, unlike the rest, liable to receive small-pox afterwards." "This," says the philosopher, "like the former obstacle, gave a painful check to my fond and aspiring hopes; but reflecting that the operations of Nature are generally uniform, and that it was not probable the human constitution (having undergone the cow-pox) should in some instances be perfectly shielded from the small-pox, and in many others remain unprotected, I resumed my labours with redoubled ardour." Jenner then discovered that so soon as either vaccine or small-pox virus had begun to undergo change it could excite ulceration, but no longer produced the specific change in the blood which is protective. Finally, he says:—

"During the investigation of the casual cow-pox, I was struck with the idea that it might be practicable to propagate the disease by inoculation, after the manner of the small-pox, first from the cow, and finally from one human being to another. I anxiously waited some time for an opportunity of putting this theory to the test. At length the period arrived. The first experiment was made upon a lad of the name of Phipps, in whose arm a little vaccine virus was inserted, taken from the hand of a young woman who had been accidentally infected by a cow. Notwithstanding the resemblance which the pustule, thus excited on the boy's arm, bore to variolous inoculation, yet as the indisposition attending it was barely perceptible, I could scarcely persuade myself the patient was secure from the small-pox. However, on his being inoculated some months afterwards, it was proved that he was secure.* This case inspired me with confidence; and as soon as I could again furnish myself with virus from the cow, I made an arrangement for a series of inoculations. A number of children were inoculated in succession, one from the other; and after several months had elapsed, they were exposed to the infection of the small-pox—some by inoculation, others by variolous effluvia, and some in both ways; but they all resisted it. The result of these trials gradually led me into a wider field of experiment, which I went over, not only with great attention, but with painful solicitude. This became universally known through a Treatise published in June 1798. The result of my further experience was also brought forward in subsequent publications in the two succeeding years, 1799 and 1800. The distrust and scepticism which naturally arose in the minds of medical men, on my first announcing so unexpected a discovery, has now nearly disappeared. Many hundreds of them, from actual experience, have given their attestations that the inoculated cow-pox proves a perfect security against the small-pox; and I shall probably be within compass if I say, thousands are ready to follow their example; for the scope that this inoculation has now taken is immense. A hundred thousand persons, upon the smallest computation, have been inoculated in these realms. The numbers who have partaken of its benefits throughout Europe and other parts of the globe are incalculable; and it now becomes too manifest to admit of controversy, that the annihilation of the small pox, the most dreadful scourge of the human species, must be the final result of this practice."

There is not, we think, any man of intelligence, whether in our own profession or in any other, who can fail to read with an interest gradually kindling into enthusiasm the few simple pages in which Jenner records the whole series of reasoning and experiment by which he resolved the difficult problem he had set himself. He writes his history in words so modest that they attain to a kind of sublimity, and so clear and well chosen that to the merest tyro he makes all plain.

The tract had long been out of print, and was not easily attainable; and we owe thanks to Mr. Brendon Curgenven, who has given us the pleasure of finding occasion again to read it through in a handsome shilling reprint volume he has caused to be issued of this valuable tract.†

* This boy was inoculated nearly at the expiration of five years afterwards with variolous matter, but no other effect was produced beyond a local inflammation around the punctured part upon the arm."

† On the Origin of the Vaccine Inoculation. By Edward Jenner, MD., F.R.S., &c. London: Printed by D. N. Shury, Berwick-street, Soho. 1801. Reprinted by E. Elfick, 23, Lr nster-terrace, W. 1863.

## VIVISECTION.

SCIENCE shrinks with disgust from such recitals as those which tell of the horrors still perpetrated in its name in the veterinary halls of Alfort, and which M. Dubois described in his recent oration at the Academy. There he saw five or six horses thrown down, each one surrounded by a group of eight pupils, either operating or waiting their turn to do so. Each student would perform eight operations, sixty four in all, lasting through ten hours of agony which would be dragged out before the unhappy animal expired. These atrocities we do not hesitate to stigmatize as unnecessary and horrible, and degrading to the men who practise them and the nation which permits them.

The French Academy finds in the language in which the English memorial on the subject is couched "harsh and unguarded words;" and undoubtedly that memorial applies blame too indiscriminately, and, dealing somewhat in ignorance with some of the branches of experimental physiology in which the highest interests of humanity are concerned, has confounded in a common censure things permissible and necessary with those which are unnecessary, inhuman, and revolting.

On the subject of this practice of performing a series of operations on living animals as a means of acquiring aptitude and dexterity we cannot believe that two opinions will be found to exist out of the circle of those whose judgment is vitiated by long custom and the force of prejudice so acquired. It is wholly superfluous; it is hideously cruel. Have we not the example of human surgery, which of itself cuts short all argument on the matter? Are the operations on the human subject less delicate and momentous? The surgeon gains all the necessary skill in the use of the knife by practice on the dead subject, and by observation and attendance at needful operations in public institutions and in private. It is idle to say that veterinary surgery cannot be satisfied with what is sufficient for human surgery. The assertion is refuted by what we see in this country. The practice which is described as still prevailing at Alfort is intolerable in the sight of the world; and we cannot believe that in a nation so humane, polished, and advanced in all the courtesies and refinements of civilization, atrocities so gross will be permitted to continue.

## MR. ALDERMAN WATERLOW AND THE SALE OF DISEASED MEAT.

ALL honour to Mr. Alderman Waterlow! He has set an example which it would be well for the public if every magistrate would follow in dealing with a most scandalous and frequent offence—the sale of diseased meat. John Hanman, a farm labourer, of Kington Magna, Dorsetshire, was cited at the Guildhall for sending four quarters of beef, unfit for food, to Newgate Market. When seen by the sanitary inspector the meat in question was in a most disgusting state, wet and flabby; and satisfactory proof was offered that it was part of the carcase of a cow which had been long suffering from a so-called cancerous affection. The offender himself had bought the animal when ailing for £2 2s. 6d., and he stated as a sort of excuse for attempting to sell the meat, that he had been offered £3 for the beast in order that it might be killed for the London market, so he thought he might take his chance of profit by acting as the would-be purchaser proposed to do. He confessed, however, that he did not expect more than twopence a pound for the meat. The previous good character of the offender was pleaded in extenuation of punishment, and as a reason why the offence should be visited by fine and not by imprisonment. But Mr. Alderman Waterlow refused to listen to the plea. The practice of sending diseased meat to market, he said, could not be too much condemned. He had no doubt the offender knew that the meat was diseased; and in the hope of deterring others from a like offence, he sentenced him to one month's imprisonment with hard labour.

## THE LATE TRIAL AT LIVERPOOL.

THE action for alleged malpractice which has been recently instituted in Liverpool, and to which we have before alluded, demands one more passing notice. Three eminent surgeons acting conjointly in the treatment of an hospital patient have had practical proof that an established reputation affords no protection against imputations of the most serious character, and calculated under less distinct circumstances to occasion much mischief. It is difficult to discover on what grounds the plaintiff's claim rested. Judging from the quotation from Sir Astley Cooper's work on Dislocations read in opening his case, the first attempt seems to have been directed to impugn the propriety of the reduction of a dislocation after a certain period, failing in which, it was urged that a want of due care and skill was exhibited in the performance of the operation. After an attentive hearing of all the circumstances, the judge, on the submission of the defendant's counsel, ruled that there was no cause of action, and so the matter ended. This is the last illustration of the dangers to which medical men are occasionally subjected, even when all that charity can provide and experience suggest is given and exercised for the benefit of the sufferer. Before we dismiss the case we would allude to the disingenuous practice of quoting to juries scraps from the opinions of eminent authorities in the manner pursued at this trial, especially so when the question in dispute continues an open one, and writers of scarce inferior reputation affirm a different experience. The literature of surgery furnishes many examples of such accidents as this happening to the most illustrious practitioners. It is not a case on which we congratulate the profession, any more than we would the judge who tried it, on his acquittal from a charge of picking pockets. Regarding all the circumstances, we pronounce it to be an open abuse of the privilege of the law, and we deeply regret that our professional brethren should have been subjected to the inconvenience it must have occasioned.

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## HEALTH OF THE CUSTOMS' OFFICERS.

THE health of bodies of men subject to medical supervision, whose sanitary history can be traced throughout, but who live amongst the general community, is at all times a matter of considerable interest. It furnishes a standard of comparison without which it would be difficult to form a correct estimate of the health-status of mixed populations. Viewed in this light, the recent Report of Dr. Dixon, R.N., on the Health of the Out-door Officers of the Customs in 1862, has an interest apart from that which attaches to its official character and the important branch of the public service to which it refers. This report differs in some respects from previous reports on the same subject. It presents a simpler classification of the officers in relation to their various duties; the diseases to which they are subject are arranged in natural groups; and tables are added showing the *duration* of the cases of sickness, as well as their comparative frequency at the different seasons of the year. These valuable modifications introduced by Dr. Dixon will, undoubtedly, contribute to a more thorough knowledge of the causes of loss of time in this branch of the public service, and to the adoption of more trustworthy preventive or remedial measures.

The strength of the department during the year was 1137. The cases admitted to the sick-list were 825 in number. The mean daily number on the sick-list was 25·7, which was equal to 2·26 per cent. of the strength. The mean duration of each case was 11·25 days. The total loss of time from sickness amounted to 9280 days, which is equal to 8·16 days for each individual in the force. The deaths numbered 14, including one from drowning, being in the ratio of 1·14 per cent., or, excluding the accidental death, 1·05 per cent. The superannuations were 7 in number.

The total amount of sickness was somewhat in excess of the previous year; but in other respects the means of the two years approximated. Disorders of the respiratory organs furnished the greatest number of cases of sickness; next on the list came disorders of the alimentary canal; and third in order of occurrence, rheumatism and gout. Fevers occasioned the least amount of sickness. This is accounted for by the men living, with few exceptions, in airy, salubrious localities, where the water-supply and drainage are good.

The proportion of sickness is much greater amongst the portion of the force stationed at Gravesend—261 in number—than in London. The former "spend nearly all their time on the river in charge of ships, and they are comfortably or uncomfortably lodged according to the size and accommodation of the vessel. They are away for several days, and have none of the conveniences of home. They are, moreover, a good deal exposed to the weather and night air in keeping strictly their stated watches. Hence it becomes necessary to place them on the sick-list when they apply with slight ailments, which, were they otherwise circumstanced, might not incapacitate them for duty."

A curious difference is observed in the proportion of sickness amongst the different classes of the service in London. While but 38 per cent. of the watermen suffered from attacks of indisposition, the ratio amongst the messengers was 46 per cent., and amongst the out-door officers [illegible] per cent. This was hardly to be expected, seeing that the watermen as a body have more laborious duties, and are probably more exposed to the weather than either of the other classes.

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## OBSCENE CIRCULARS.

WE have recently had forwarded to us many quack advertisements, all of which are more than usually infamous. As one is to a certain extent novel, to it we give precedence in our remarks. "Mrs. F., Accouchense [living in a neighbourhood not unknown to the police] begs to intimate that (under the auspices and with the aid of an eminent medical gentleman) she may be consulted professionally," &c. The handbill proceeds to enumerate the several possible diseases to which women are liable, for each one of which Mrs. F.'s services are available, and then adds: "Mrs. F. wishes it to be particularly understood that all medicines prescribed are prepared under the guidance of a medical gentleman of great experience, who can be consulted in connexion with Mrs. F. if desired." This publication, which contains the usual amount of grossness, our correspondent informs us, was dropped into the letter-boxes of several private houses in a West-end district. We are asked to suggest a remedy for such gross indecencies. There is practically no remedy. Mrs. F. and her paramour in professional degradation must continue at large until such time as her overstrained ability brings her within reach of the law. If there be any truth in her declaration that a medical man acts in consultation with her, we can only suppose that it is one influenced by a kindred spirit. We regret to say we cannot give an unqualified denial to her statement, though we are unwilling to believe it has any foundation in truth. If it be so, and one of our profession should thus pass the utmost bounds of degradation, let his practice be as a byeword and a scorn, and his name be remembered no more.

Rascality seems to have manifested curious ingenuity in furtherance of the schemes of a so-termed American medical practitioner, who, calling himself a doctor, lives where those whom he addresses most do congregate. A yellow bill, setting forth in most unmistakable terms that which he proposes to treat, has attached to it a small slip of adhesive paper, which enables it to be fastened to the backs of private carriages standing in the streets. This bill, printed in true sensation style, is headed "No cure, no pay," and appropriately, on the part of the alleged American physician, announces his overtures to the public.

No doubt occurrences of this kind are very much to be re-

gretted, and ought to be prevented. Who is to take steps for that purpose? So long as the Medical Council, to whom the Government have committed the guardianship of the public in such matters, is content to permit their practice, what can private members of the profession do? It is not fair to expect that they will place themselves in the position of public prosecutors, or have any desire to occupy the invidious post of public accusers. The Medical Council have, we believe, ample authority to protect the public from such impostors. Their forbearance to do so is inexplicable, and, to our mind, inexcusable. These practices and advertisements are now a metropolitan nuisance as well as an indecency, an effectual remedy for which cannot be much longer delayed.

# Correspondence.

"Audi alteram partem."

## THE CLIMATE OF ALGIERS.

*To the Editor of* THE LANCET.

SIR,—Will you give me space in your columns to make a few remarks with reference to your article upon Algiers in THE LANCET of the 22nd inst., and give the result of two years medical experience of its climate? I can distinctly confirm all that has been stated as to its general salubrity and decided efficacy in the cure of numerous forms of pulmonary disease; it exercises a marked influence upon the earlier stages of phthisis, and, I can even say, I have seen hopeless cases of that disease, that have come here as a forlorn hope, remain six months and leave somewhat improved. Upon their arrival I had not anticipated their survival many weeks. All forms of pulmonary disease, gout, rheumatism, and chronic syphilis derive marked benefit from the climate, but I cannot counsel its being resorted to by those suffering from cerebral or spinal disease. The air is dry and exciting. The temperature during thirteen years of the six winter months, from October to June, only varied upon the average from 69° to 73° Fahr. From all statistics I find that deaths from tuberculosis are only six per cent.; in Europe I believe they are thirty-five per cent. What the statistics of that disease are in Egypt, I do not know. When I was up the Nile, in 1855, all the cases of phthisis that I saw were in the incipient stage. The regiments of the Pacha of Egypt, that are recruited in Abyssinia and sent northward to Cairo, suffer severely from phthisis. Our last winter was an exceptional one, being the wettest, as this summer is the hottest, known since the French occupation in 1833. This prevalence of rain and exaltation of temperature has, however, been the same throughout the entire *littoral* of the Mediterranean. Last winter we had visitors from Nice and Naples to escape the bad weather. Dr. A. Bertherand (who has left Algiers and gone to Mexico) coincides, I know, with me in the views I have stated above. In a conversation I had with him last February, we both remarked upon the fact, that although the weather was not of usual fairness, yet the most desperate cases of phthisis appeared to do better than could be expected; but this is no precedent for their being sent here.

Permit me to make a few remarks upon some precautions necessary for invalids.

Great care should be taken in the selection of a suitable residence, so as to avoid damp, and much depends upon its *locale*. Algiers consists of a small city, surrounded with extensive suburbs. To its right are Mustapha Supérieur and Inférieur; the former a wooded hill side, studded with villas, and having an elevation of from 500 to 600 feet. Mustapha Inférieur is *à fleur d'eau*, but neither so picturesque nor so healthy. To the left is St. Eugène, not unlike the south coast of Devon, somewhat damp, and as it faces the east, comparatively cold. The town itself is composed of two portions—one native, built up of narrow, steep streets, occupied solely by a motley population of Spaniards, Jews, and Arabs, with no accommodation for visitors; the other, French, consists of two long streets, with arcades, in imitation of the Rue Rivoli at Paris, and a central place, girt with trees and bounded with hotels. It is here that those preferring a town residence mostly reside; the choice of a residence depending, of course, upon the taste and purse of the individual. I recommend invalids coming here to bring a supply of India gauze underclothing; indeed, there are many hygienic rules as to diet and exposure to be observed, which exercise a material influence upon the well-doing of the individual. I have endeavoured to make this letter as short as possible, and purposely abstained from any *éloge* of the beauties of Algiers: I will merely remark, the Bay of Naples is the only rival of that of Algiers.

I am, Sir, your obedient servant,

THOS. CALLAWAY, F.R.C.S.

Rue du Hamma, Algiers, August, 1863.

## AMPUTATION OF THE THIGH.—QUESTION OF FEE.

*To the Editor of* THE LANCET.

SIR,—I have read in your last number a letter from Dr. Mackinder, in which he solicits the opinion of the profession relative to a charge which he has made against a railway company for amputating the thigh of one of their servants. I have had some experience in matters of this kind, and will, with your permission, as briefly as possible and without going into particulars, narrate a few cases which will serve to show that Dr. Mackinder's claim is both just and reasonable.

Case 1. An engine-driver in passing this station accidentally fell under the engine, causing extensive fractures of the leg in every particular similar to the one in question, and with precisely the same result. I amputated the leg; he seemed to go on favourably until the fourth day, when he died from inward mischief. I sent in my account immediately to the Great Eastern Railway Company, and I received their cheque forthwith. My charge was £10 10s.

Case 2. A young man in the service of the same company, employed in pile-driving, had his arm dreadfully smashed, which required amputation at the shoulder. I performed the operation, and attended subsequently for eight or ten weeks. He made a splendid recovery. My charge in this case was twenty guineas, one half of which was paid by the company, and the other collected amongst the gang. The practitioner who was first called in and assisted me in the operation received £5.

Case 3. One of the booking-clerks at this station fell between the platform and a train in motion. This was a singular accident, inasmuch as no bone was broken. The gastrocnemius was completely severed from its attachments, and some of the vessels were torn. This was a very protracted attendance, and involved considerable time and attention. My bill was thirty-five guineas, twenty-one of which were paid by the company, and the remainder by the patient himself. I may mention that I was not then, as I am now, one of the company's surgeons.

I am, Sir, your obedient servant,

MICHAEL O'REILLY, M.D., M.R.C.S.

Bishop's Stortford, Sept. 1863.

*To the Editor of* THE LANCET.

SIR,—In answer to the question of fee for amputation of the thigh put by your correspondent, Dr. Mackinder, I for one am decidedly of opinion that his demand upon the company in question was a fair and honourable, but certainly not a remunerative one; and, in justice to himself, I cannot see how Dr. Mackinder can well accept a less amount for professional services rendered than the value he himself put upon them. There cannot be a doubt for a moment that the claim ought never to have been disputed by any respectable company. It is true the subsequent attendance upon the case was not prolonged; nevertheless, it appears the patient was visited on thirteen different occasions, and lived at some little distance from the doctor's residence, and surely the consequent anxiety and responsibility attending such cases ought, when considering the subject of reward, to be taken into account. Dr. Mackinder may well call the fees allowed by the Poor-law Commissioners the minimum range of fees in such cases, and at the same time express himself with some degree of doubt as to whether it can really be the wish of any respectable company to rival boards of guardians in these matters. Every medical man knows to his sorrow the miserable inadequacy of Poor-law payments for services rendered in such cases. By way of illustration I will just mention a case in point. Not many months since I was called upon (as the only means likely to afford relief) to perform two amputations of the leg upon pauper patients in my district. One did very well, the stump

healing by the first intention. A very different state of things, however, existed in the other: here my patient was very much worn by disease, the subject of articular caries, and of a scrofulous constitution, so that a long time elapsed before recovery took place; my subsequent daily attendance, in fact, extending over several months, causing, of course, much anxiety; and for this prolonged attendance the usual amount only in such cases was allowed. I trust and believe, however, our profession is daily taking a higher standing in society, and becoming better appreciated by the public in general, and that it may, with some degree of truth, be said to the rising generation of medical men, "There's a good time coming, boys;" and ere long you will not have to complain of the insufficient remuneration of your professional services, either by boards of guardians, railway companies, or any other companies. Apologizing for the prolixity of this letter,

I am, Sir, your obedient servant,

OCTAVIUS FORBES N. ROYLE, M.D., F.R.C.S.

Milnthorpe, Sept. 1863.

## MARKING OF SOLDIERS.

*To the Editor of* THE LANCET.

SIR,—Notwithstanding that the medical journals—your own among the number—have called attention to the present state of the regulations regarding the false position in which a medical officer is placed in the branding of soldiers, no change whatever has taken place.

It has never fallen to my lot to direct an official, engaged under myself in the care of the sick, in branding a man at a place said to be designed for the relief and cure of sickness, but it may come upon me sooner than I relish.

I suppose that I must be morbidly sensitive on the subject of what affects my professional position and duty as a medical man, for the Director-General appears to have no scruples on this head. The thing is done with his sanction. From his department have the instruments come; nay, for all we know, Whitehall yard may be a kind of miniature Armstrong factory for designing the letters D and B C, and making the requisite instruments.

When the New Zealand chiefs were in London I looked anxiously for their visit to the medical department. They must have been interested in ingenious contrivances for tattooing. When Lord Macaulay's celebrated New Zealander shall take his stand upon the broken arch of London-bridge to sketch the ruins of St. Paul's, it is just possible he may disinter the "things" used for marking B C. If he be an intelligent savage and apt at drawing inferences, he will at once conclude that he has discovered a military stamp for marking those C.B.s mentioned as famous warriors of old. He might even go further and suggest the bearing that these instruments had upon the question of the common origin of the human family. "Here," he would say, "we perceive that these English were a people advanced in arts; they tattooed like ourselves."

In all seriousness, however, what I desire to say is this:—

The military authorities may invent any punishment they like. On these subjects I may have my own ideas, which I do not mean to press upon any one; but let things be done decently, and in order. Let a soldier be marked, as he is flogged, upon parade, as a punishment, in the presence of his comrades, under the command of a combatant officer and in the presence of a medical one; but let us restrain our hands from these things, and not be forced to turn the hospital and its officials into agents for any punishment.

Yours very obediently,

Aldershot, Sept. 1863. A MEDICAL OFFICER.

## INOCULATION OF COWS.

*To the Editor of* THE LANCET.

SIR,—There is one subject connected with the treatment of cows, when recently brought into the sheds of London, which, I think, has not been sufficiently noticed. I allude to the inoculating of them as a protection against pleuro-pneumonia—an operation in which the keepers have the greatest confidence. An incision is made near the end of the tail with a lancet or fleam, then a small piece of healthy or diseased lung or matter from a sore made on another inoculated cow is inserted; inflammation supervenes, which subsides favourably in most cases, but in others a joint or more, or even the greater part of the tail, rots away. Untoward symptoms sometimes occur after the operation, inducing the owners to destroy the animals. It is right to state that lung affected with pleuro-pneumonia is most usually introduced. One veterinary surgeon of eminence disapproves of the operation while another thinks it is useful against ordinary pleuro-pneumonia, but not in its epidemic form. It appears, therefore, to be important to discuss this question, in order that the operation, if requisite, should be properly performed; that the milk should not be sold while a ferment is established in the blood; or that the operation should be abandoned, if proved to be unnecessary for the sake of the animal and the public health.

I am, Sir, your obedient servant,

C. J. B. ALDIS, M.D. Cantab.,

Medical Officer of Health for St. George's, Hanover-square.

Chester-terrace, Chester-square, Sept. 1863.

## POISONING BY OPIUM.

*To the Editor of* THE LANCET.

SIR,—In your impression for Sept. 5th, my neighbour, Mr. May, appears troubled at, and dissatisfied with some remarks of mine relative to a case of poisoning by opium reported by me in THE LANCET a short time ago. I have no desire to question the occasional correctness of the commercial particulars touching the laudanum retailed at small shops with which Mr. May has favoured your readers; but, on the other hand, I believe his remarks are not at all applicable to the case in point, in which I examined and tested the laudanum, and it was apparently equal in power to that of the Pharmacopœia. Moreover, that the preparation met with in such shops is not always diluted and sophisticated in the manner described by Mr. May I am well satisfied, for I have notes of a case in which an adult narrowly escaped death after a dose of half an ounce bought at a grocer's; and I have frequently seen persons of various ages narcotized to a degree quite inconsistent, from the doses which had been taken, with the assumption that the laudanum was diluted to any important extent, although it was obtained from similar sources.

It is obvious that in reporting cases of poisoning by fluid preparations of opium critical exactitude as to strength must be but rarely attainable; indeed, Dr. Taylor states "that there are no satisfactory means of determining the quantity of opium present in a suspected liquid." Still, by the practical mind pretty safe conclusions can be arrived at, and in the course of a more extended experience Mr. May may himself probably witness more surprising effects and anomalous symptoms in poisoning by opium than those reported by me; and, perhaps, he may even arrive at that candid estimation of the opinions and observations of others which time alone can effect upon the mind of the young practitioner of medicine. Apologizing for trespassing on your valuable space,

I am, Sir, your obedient servant,

RICHARD ELLIS, L.R.C.P. Edin.

Newcastle-on-Tyne, Sept. 1863.

# Medical News.

APOTHECARIES' HALL.—The following gentlemen passed their examination in the Science and Practice of Medicine, and received certificates to practise, on the 3rd inst.:—

Davies, Pryce Lloyd, Abergele, Denbighshire.
Thompson, Thomas, Thirsk, Yorkshire.

The following gentleman also on the same day passed his first examination:—

Yates, William, Westminster Hospital.

The annual examination in Materia Medica and Pharmaceutical Chemistry will be held at Apothecaries' Hall on the 21st and and 23rd of October. Prizes of a gold and a silver medal with a book will be awarded.

ARMY MEDICAL DEPARTMENT.—The Director-General presents his compliments to the Editor of THE LANCET, and begs to enclose a list of the candidates who were successful at the competitive examination at Chelsea Hospital on the 10th of August last:—

| | | |
|---|---|---|
| Atkins, C. J. | Dick, F. | Lyons, P. P. |
| Barker, Jas. | Elgee, W. | Morris, H. |
| Barker, J. E. | Fearon, Geo. | Preston, A. F. |
| Barry, J. | Forsayeth, R. W. | Shaw, J. A. |
| Beatie, J. Y. | Gouldsbury, V. | Smith, W. P. |
| Bolton, R. H. | Greene, H. R. | Thomson, A. |
| Byrne, F. A. | Greenhill, J. R. | Troup, A. W. |
| Collier, H. C. | Haines, C. | Turner, A. |
| Condon, E. H. | Howard, F. | Weir, C. J. |
| Cunynghame, R. | Kynsey, W. R. | White, Thos. |
| Delmege, J. P. | Lawless, R. W. | |

Whitehall-yard, Sept. 9th, 1863.

MR. J. W. DAVIES, the medical publisher of Princes-street, Soho, died last week, at the age of fifty-four, from "Bright's disease." Mr. Davies was well known as an upright and honourable man, and had established a successful and steadily-increasing business. After a laborious life in the service of the profession, he has left a large family inadequately provided for. We understand that arrangements have been entered into with Mr. Robert Hardwicke, the well known and enterprising publisher of Piccadilly, to carry on the business, and that the interests of the family will not be lost sight of in the arrangements that will be made.

LONDON COLLEGE OF PHYSICIANS.—During the absence of the president of the College of Physicians from town, Dr. Alderson, F.R.S., of St. Mary's Hospital, has, as on last year, fulfilled the duties of the office.

CHOLERA is raging at Shanghae. It is also prevalent at Lucknow, Allahabad, and other places in the north-west of India. There is too much reason to fear that proper sanitary precautions respecting this formidable disease are neglected in India.

TASTELESS MEDICINE.—M. Graw, a French physician, proposes to destroy the taste of intensely bitter medicines by mixing chloroform with them in certain proportions. He asserts that the taste and odour even of assafœtida can be annihilated.

DEATHS IN THE CITY OF LONDON.—The mortality returns are above the average. During the last six weeks there have been 317 deaths in the City, the average number during the same period for the last seven years having been but 286; 129 of these were of children under five years of age, and 55 of persons of sixty years and upwards.

DEATHS IN NEW YORK.—During the last week in August the deaths in New York were 262 more than during the corresponding week in 1862. It is difficult to estimate, in the absence of correct information, to what extent this increased mortality is due to the negligence of the authorities in carrying out proper means for arresting preventable diseases. There is good reason, however, to believe that in the present excited state of the inhabitants of New York there has been a culpable negligence of those sanitary precautions which are essential to the physical well-being of the inhabitants of that city.

CORONERSHIP.—Dr. Moore, of Ardee, intends to offer himself as candidate for the office of coroner vacated by P. J. Neary, Esq. If the members of the medical profession exercise their influence in a legitimate manner, Dr. Moore cannot fail of success. Under proper management a legal coroner will become a curiosity. It is to the interest of the public that this should be the case. In an inquiry as to the cause of death the only competent judge must be a medical practitioner. A lawyer is totally unfit to preside at an inquest, in which the issue to be arrived at is purely medical.

VACCINATION.—The Poor-law Board report that in the year ending Michaelmas last 702,181 children were born in England and Wales, but only 437,693 persons were successfully vaccinated in the year by the public vaccinators. In 1860, with a smaller number of births, 485,927 persons were successfully vaccinated by the public vaccinators. In the present unsatisfactory way in which the Vaccination Act is carried out these figures can be at best only an approximation to the truth, inasmuch as we have no means of determining the number of those who are vaccinated by private practitioners. Statistics with regard to successful private vaccination we have none; in fact, it is quite the exception for medical gentlemen in private practice to furnish the registrar with certificates of the operation. So long as this omission is conspicuous it is impossible to arrive at anything but a vague conclusion as to the exact state of vaccination in this kingdom. Our medical brethren are in no way responsible for the deficiencies of legislators or the imperfection of Acts of Parliament. No men do so much for the establishment of truth gratuitously as members of the medical profession. Under the Registration Act they cheerfully contribute to the statistics of births and deaths; under proper and liberal regulations with regard to vaccination they would give their unpaid services as generously and as freely. Without any reflection on the other learned professions, it is due to our own to assert that in all matters relating to the public health they stand foremost in the cause of humanity. It is not expected that a clergyman or a lawyer should furnish information with respect to births and deaths without payment: they claim it as a right. It is not so with us: we ask not and receive not any reward for doing what we regard as an act of duty to the public. It is only an act of justice to say that medical practitioners are foremost in every movement that has for its object the preservation of the public health and of human life. True to the instincts of their calling, they sacrifice private emolument to the *salus populi*.

POISONING BY MISTAKE.—An inquest has been held at Moxley on the body of a boy named Vann, who was poisoned by the administration of laudanum instead of tincture of rhubarb. It was purchased at the shop of Mr. Woolley, a chemist, who had mistaken the bottle containing it. A post-mortem examination made by Mr. Latham, of Darlaston, did not, however, discover any trace of poison in the body, although it was stated that the membranes of the brain indicated poisoning by some narcotic. The jury gave a verdict of sudden death, cause unknown, at the same time they had no doubt that death was occasioned by the chemist supplying laudanum for tincture of rhubarb; yet, as the medical evidence did not confirm that opinion, they could not find him guilty of manslaughter.

SMALL-POX AT KESWICK.—In consequence of the ravages made by this disease, the greatest care has been taken to prevent its extension: most of the children have been vaccinated. Of ten fresh cases that occurred during last week, nearly the whole were influenced by the proximity of a noxious drain. If Keswick is to be equal in salubrity to its picturesque situation, the authorities of the town must be active in the promotion of sanitary reform. It is a disgrace to such a locality for the beauties of its scenery to be overshadowed by a pestilential cloud.

HEALTH OF LONDON DURING THE WEEK ENDING SATURDAY, SEPTEMBER 5TH.—In the week that ended last Saturday, the deaths in London exhibited a considerable decrease; they fell to 1232, which is a lower number than any that has been returned since the first week of July. The chief decrease in the mortality arose from diarrhœa, which fell from 181 to 123; whilst the deaths from small pox, scarlatina, diphtheria, whooping-cough, and typhus, were about the same as in the previous week. More than one half of the mortality during the week occurred to the younger portion of the population, namely, to 704, who were under twenty years of age; 326 were between twenty and sixty years of age, and 201 at sixty years of age and upwards. A gardener is recorded as having died at the advanced age of ninety-seven years.

Births last week—Boys, 925; girls, 938. Total, 1863.

## MEDICAL VACANCIES.

Bath Eastern Dispensary—Resident Medical Officer.
Birmingham and Midland Eye Hospital—House-Surgeon.
Coventry and Warwickshire Hospital—Medical Officer, vice Dr. Ogilvy, deceased.
Leeds Public Dispensary—Assistant Resident Medical Officer, vice Mr. Corrie, resigned.
Liverpool Northern Hospital—Junior House-Surgeon.
North London Consumption Hospital—Physician, vice Dr. Head, resigned.
Queen's Hospital, Birmingham—House-Surgeon, vice Mr. J. St. John Wilders.

## MEDICAL APPOINTMENTS.

C. S. A. ATKINSON, M.R.C.S.E., has been elected House-Surgeon and Secretary to the West Norfolk and Lynn Hospital, vice W. E. G. Burnes, M.R.C.S. Eng., resigned.

J. S. BRISTOWE, M.D., has been elected Physician to the Asylum for Female Orphans, Westminster-road, vice Sir Chas. Locock, Bart., M.D., resigned.

S. BROWNE, L.K.Q.C.P.I., has been re-elected Surgeon to the General Hospital, Belfast.

A. BUCHANAN, L.R.C.S.Ed., has been re-elected Medical Officer of the Parish of Tyree, Argyleshire.

J. J. CORRIE, M.R.C.S.E., late Junior Resident Medical Officer to the Leeds Public Dispensary, has been appointed Resident Medical Officer to the Leeds Fever Hospital and House of Recovery, vice F. Hall, M.R.C.S.E., resigned.

C. FINDLAY, L.R.C.S.Ed., has been appointed a Public Vaccinator by the Parochial Board of Arbroath, Forfarshire.

S. J. GRAYDON, M.D., has been appointed Surgeon to the Constabulary, Scotstown, Co. Monaghan, vice J. W. Mouritz, L.R.C.S.I., resigned.

C. F. HARDING, M.D., has been appointed Medical Officer and Public Vaccinator for the Northern District of the Whittlesey Union, vice W. W. Phillips, resigned.

E. HEAD, M.B., has been elected Assistant Physician to the Metropolitan Free Hospital, vice W. Abbotts Smith, M.D., elected Physician.

J. HERBERT, L.F.P. & S. Glas., has been appointed Medical Officer and Public Vaccinator by the Parochial Board of New Monkland, Lanarkshire.

R. D. NICOLLS, M.D., has been elected Medical Officer and Public Vaccinator for the Kildrea Dispensary District of the Dunshaughlin Union, Co. Meath, vice H. B. Webb, M.R.C.S.E., deceased.

M. C. O'HARA, M.D., has been elected Medical Officer for the Kilkerry Dispensary District of the Swinford Union, Co. Mayo, vice T. W. Blackwell, L.R.C.S.I., appointed to the Balla Dispensary District of the Castlebar Union, Co. Mayo.

G. PERRY, F.R.C.S.I., has been appointed Medical Attendant to the Allanwood Constabulary, vice F. Pentland, L.K.Q.C.P.I., deceased.

J. M. PIRRIE, M.D., has been re-elected Physician to the General Hospital, Belfast.

P. RANKIN, M.D., has been appointed Medical Officer and Public Vaccinator by the Parochial Board of New Monkland, Lanarkshire.

I. ROWLANDS, M.R.C.S.E., has been elected Medical Officer and Public Vaccinator for the Tregynon District of the Newtown and Llanidloes Union, Montgomeryshire, vice C. Hall, M.R.C.S.E., who resigns that portion of his District.

R. SAUNDERSON, M.D., has been appointed Medical Attendant to the Constabulary, Russelwood, vice F. Pentland, deceased.

W. ABBOTTS SMITH, M.D., has been elected Physician to the Metropolitan Free Hospital, vice J. H. Jackson, M.D., resigned.

T. TORRANCE, L.F.P. & S. Glas., has been appointed Medical Officer and Public Vaccinator by the Parochial Board of New Monkland, Lanarkshire.

J. B. TUKE, M.D., has been appointed Assistant Physician to the Royal Lunatic Asylum, Morningside, Edinburgh, vice D. Yellowlees, M.D., appointed Medical Superintendent of the Glamorganshire County Lunatic Asylum, Bridgend.

G. W. WANNAN, L.R.C.S.Ed., has been appointed a Public Vaccinator by the Parochial Board of Arbroath.

W. WATERS, L.K.Q.C.P.I., has been appointed Medical Attendant to the Constabulary of Carbury and Ticknevin, vice F. Pentland, deceased.

T. SPENCER WELLS, F.R.C.S.E., has been appointed Surgeon to her Majesty's Household.

J. WILTSHIRE, M.R.C.S.E., has been appointed Surgeon to the Military Hospital at Marchwood, vice W. Spear, M.D., deceased.

## MILITARY AND NAVAL MEDICAL APPOINTMENTS.

G. BAILLIE, M.D., Surgeon Madras Service, lately promoted, has been posted to the 19th Native Infantry.

H. J. BLANE, Assist.-Surgeon, has been attached to the 15th Bombay Native Infantry.

W. CAMPBELL, M.D., Surgeon-Major Bombay Service, has been appointed to officiate as Presidency Surgeon, 1st District, vice Acting Deputy Inspector-General of Hospitals D. Costello, M.D.

J. T. COMERFORD has been appointed Acting Assist.-Surgeon to the "Royal Adelaide" (additional) for service at Plymouth Hospital.

H. COOKSON, L.R.C.P.Ed., Assist.-Surg. 104th Foot, Bengal, has been directed to proceed to Delhi, and assume medical charge of G Battery 22nd Brigade and No. 1 Battery 25th Brigade Royal Artillery, vice Assist.-Surg. Moir, appointed to the Civil Station of Mynpoorie.

J. CRAW, M.D., has been appointed Acting Assist.-Surg. to the "Victory" (additional) for service at Haslar Hospital.

H. CROCKER, M.D., Assist.-Surg. 4th Infantry Hydrabad Contingent, has been ordered to assume medical charge of the Detachments of Cavalry and Artillery and Details, in addition to his own duties.

W. DAVEY, Assist.-Surg. Bombay Service, has been promoted to Surgeon, vice Deputy Inspector-General of Hospitals J. J. Hamilton, retired.

W. D. DODSWORTH, Assist.-Surgeon R.N., has been appointed to the "Marlborough" (additional).

J. FRAZER, Acting Assist.-Surg. R.N. June 10th, 1863, has been appointed to the "Marlborough."

E. FOOTNER, M.R.C.S.E., Staff Assist.-Surg. Army, has been appointed Assist.-Surg. to the 72nd Foot, vice J. S. Johnston, M.D., appointed to the Staff.

H. D. GLASSE, M.R.C.S.E., officiating Deputy Inspector-General of Hospitals Bombay Service, has been posted to the Mhow Division, but will remain at Belgaum and conduct the duties of Deputy Inspector-General of Hospitals in that Division during the absence of Dr. Leith on special duty at Bombay.

J. B. HARRISON, M.D., Surg. Indian Service, having completed twenty years' actual service, has been promoted to Surg.-Major.

R. HAY, M.D., has been appointed Acting Assist.-Surgeon to the "Royal Adelaide" (additional) for service at Plymouth Hospital.

J. HENDERSON, M.D., Staff Surgeon R.N. Feb. 21st, 1860, has been appointed to the "Boscawen."

P. HOLMES, Assist.-Surgeon Bengal Service, has been re-appointed to No. 4 Battery 24th Brigade Royal Artillery, and directed to afford medical aid to a Detachment of the 93rd Highlanders and the families of the Regiment.

J. P. KELLY, Surg. 24th Bengal Native Infantry, has been directed to receive medical charge of the Artillery Division, Agra, in addition to his other duties; and having completed twenty years' actual service, he has been promoted to Surg.-Major.

R. B. KINSEY, Surg.-Major attached to the 16th Bengal Native Infantry, has been promoted to Deputy Inspector-General of Hospitals, with temporary rank, during the absence of Surg. Faithfull, who has applied for leave on medical certificate.

R. P. LINTON, Surgeon Madras Service, having completed twenty years' service in India, has been promoted to the rank of Surgeon-Major under the provisions of the Royal Warrant of Jan. 13th, 1860, and G. O. G. No. 9 of Jan. 8th, 1861.

W. LOCKHART, M.D., Assist.-Surg. R.N. April 1st, 1859, has been appointed to Haslar Hospital.

J. A. MACDONALD has been appointed Acting Assist.-Surg. to the "Victory" (additional) for service at Haslar Hospital.

D. MACKENZIE, 1st Class Assist.-Surg. Madras Service, has been promoted to Surgeon, vice Sanderson, retired.

W. M'MAHON has been appointed Acting Assist.-Surg. to the "Royal Adelaide" (additional) for service at Plymouth Hospital.

J. MIDDLETON, M.D., Assist.-Surg. R.N. March 11th, 1861, has been appointed to the "Weser."

J. MULLINS, M.R.C.S.E., Surg. St. Helena Regiment, has been appointed Staff Surgeon.

T. MURRAY, M.D., Civil Assist.-Surgeon at Ajmere, Bengal, has been invested with the powers of a Magistrate, as described in Sect. 22 Act XXV. of 1861, to be exercised within the precincts of the Jail under his charge.

W. NIVEN, Assist.-Surg. Bombay Service, has been appointed to officiate as Superintendent of the Lunatic Asylum at Colaba, vice Dr. Campbell.

J. H. OLIVER, M.R.C.S.E., Staff Assist.-Surg. Army, has been appointed to do duty with the 20th Hussars at Scalkote.

H. A. ORPEN, Assist.-Surg. Bombay Service, attached to the General Depôt, has been appointed to the medical charge of Ghizree Sanitarium.

A. S. PRATT, M.R.C.S.E., Assist.-Surgeon R.N. Jan. 22nd, 1855, had been appointed to the "Dee."

W. REID, M.D., has been appointed Acting Assist.-Surg. to the "Victory" (additional) for service at Haslar Hospital.

J. H. ROSS, M.B., Assist.-Surg. 39th Foot, has been appointed Staff Surgeon, vice Boyd, appointed Assist.-Surg. to the 90th Foot.

J. A. SCOTT, Staff Assist.-Surgeon doing duty with the 97th Foot, Bengal, has been directed to assume the medical charge of a Detachment of the 91st Foot at Nagode, and a Detachment of the 12th Bengal Cavalry, from Surg.-Major H. B. Hinton, 11th Native Infantry.

T. THORN, Assist.-Surg. Bombay Marine, Supernumerary of the "Ajdaha," has been transferred to the "Berenice."

J. TULLOCH, M.D., Assist.-Surgeon St. Helena Regiment, has been appointed Staff Assist.-Surg.

F. TURNBULL, M.D., Surg. Bengal Service, officiating Civil Assist.-Surgeon at Shahjehanpore, has been placed in charge of the Jail of that District, and invested with the powers of a Magistrate, to be exercised within the precincts of the Jail under his charge.

F. L. W. WRIGHT, L.R.C.S.Ed. Assist.-Surg. R.N. Dec. 12th, 1856, has been appointed to the "Cumberland."

# Births, Marriages, and Deaths.

## BIRTHS.

On the 1st ult., at Nantwich, the wife of John Edwin Williamson, M.D., of a daughter.

On the 6th ult., at Linstead, St. Thomas-in-the-Vale, Jamaica, West Indies, the wife of Jasper Cargill, M.D., of a daughter.

On the 3rd inst., the wife of J. C. B. Smallman, M.D., of Willingham-by-Stow, Gainsborough, of a daughter.

On the 7th inst., at Thaxted, Essex, the wife of John Wm. Fry, M.R.C.S., of a son.

On the 7th inst., at Norwich, the wife of John Buckenham, L.R.C.P.Ed., of a daughter.

On the 7th inst., at Brunswick-square, the wife of M. Davis, M.D., of a daughter.

On the 8th inst., at St. Thomas's-street, Southwark, the wife of Sydney Jones, M.B., of a daughter.

On the 9th inst., the wife of E. Headlam Greenhow, M.D., of a daughter.

## MARRIAGES.

On the 3rd inst., at Mortlake, Dr. Morgan, of Admiral-terrace, Bridge-road, Vauxhall, to Charlotte, widow of the late Henry Darby, Esq., of Kennington.

On the 5th inst., at St. Pancras Church, Euston-square, Edward Ellis, M.D., of Warwick-street, Belgravia, only son of Cydwelyn Ellis, M.D., of Fitzroy-street, Fitzroy-square, to Kathrine Margaret, eldest daughter of J. Wykeham Archer, Esq., of Oakley-square.

## DEATHS.

At New York, J. Richardson, L.F.P. & S. Glas., late of Knapton, near Thirsk, Yorkshire.

On the 22nd of May, at Melbourne, Victoria, D. J. Tierney, M.D.

On the 9th of July, at Akyab, East Indies, T. J. Morris, L.R.C.S.I., aged 28.

On the 28th of July, at Hydrabad, Sindh, J. Smeeton Allanby, M.D., Assist.-Surg. 95th Regiment.

On the 15th ult., at Boston, U.S., Dr. D. Roberts, late of Mallwyd, Merionethshire, aged 30.

On the 29th ult., at West Ham, Essex, C. K. Levick, M.R.C.S.E., aged 52.

On the 5th inst., at Watford, Herts, John Pidcock, M.D., aged 90.

On the 7th inst., from injuries by being knocked down and run over by a cab, Geo. Mullins, Surgeon, of Holland-street, Brixton, aged 72.

# Medical Diary of the Week.

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| MONDAY, SEPT. 14 ..... | ST. MARK'S HOSPITAL FOR FISTULA AND OTHER DISEASES OF THE RECTUM.—Operations, 1½ P.M.<br>METROPOLITAN FREE HOSPITAL. — Operations, 2 P.M. |
| TUESDAY, SEPT. 15..... | GUY'S HOSPITAL.—Operations, 1½ P.M.<br>WESTMINSTER HOSPITAL.—Operations, 2 P.M. |
| WEDNESDAY, SEPT. 16 | MIDDLESEX HOSPITAL.—Operations, 1 P.M.<br>ST. MARY'S HOSPITAL.—Operations, 1 P.M.<br>UNIVERSITY COLLEGE HOSPITAL. — Operations, 2 P.M.<br>LONDON HOSPITAL.—Operations, 2 P.M. |
| THURSDAY, SEPT. 17 ... | ST. GEORGE'S HOSPITAL.—Operations, 1 P.M.<br>CENTRAL LONDON OPHTHALMIC HOSPITAL — Operations, 1 P.M.<br>GREAT NORTHERN HOSPITAL, KING'S CROSS.—Operations, 2 P.M.<br>LONDON SURGICAL HOME.—Operations, 2 P.M.<br>WEST LONDON HOSPITAL.—Operations, 2 P.M.<br>ROYAL ORTHOPÆDIC HOSPITAL. — Operations, 2 P.M. |
| FRIDAY, SEPT. 18..... | WESTMINSTER OPHTHALMIC HOSPITAL. — Operations, 1½ P.M. |
| SATURDAY, SEPT. 19 ... | ST. THOMAS'S HOSPITAL.—Operations, 1 P.M.<br>LOCK HOSPITAL, Dean-street, Soho.—Clinical Demonstrations and Operations, 1 P.M.<br>ST. BARTHOLOMEW'S HOSPITAL.—Operations, 1½ P.M.<br>KING'S COLLEGE HOSPITAL.—Operations, 1½ P.M.<br>ROYAL FREE HOSPITAL.—Operations, 1½ P.M.<br>CHARING-CROSS HOSPITAL.—Operations, 2 P.M. |


## TERMS FOR ADVERTISING IN THE LANCET.

For 7 lines and under .....£0 4 6 | For half a page .....£2 12 0
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Advertisements which are intended to appear in THE LANCET of any particular week, should be delivered at the Office not later than on Wednesday in that week: those from the country must be accompanied by a remittance.

# To Correspondents.

**THE STUDENTS' NUMBER OF THE LANCET** will be published on Saturday next, September 19th. Those gentlemen holding official situations connected with Medical Institutions in the United Kingdom, who have not yet forwarded the necessary information to our Office for publication in that Number, are earnestly requested to send it without the delay of a single post.

*Hibernicus.*—The article in the *Irish Times*, respecting some operations performed in Dublin, really does not merit the consideration which our correspondent appears to attach to it. The discussion of medical subjects in political newspapers, under ordinary circumstances, is not to be commended. The present case is not an exception to that rule. No one acquainted with the merits of Irish surgeons will fail to acknowledge that they are second to none as professors of either the science or art of surgery. At the same time it may be stated that it does not add to the reputation or dignity of English surgical practitioners for our Hibernian brethren to go out of their way to sing poetic paeans about the wonderful skill of London operators. The operation to which these remarks refer is not one of peculiar difficulty. The real test of the capacity of the surgeon consists in the accuracy of his diagnosis rather than in his mere manual dexterity. The latter is not to be underrated, but it is not the most important part.

*Jurisprudence.*—We believe that MM. Dechambre and Delpech have satisfactorily shown that Trousseau's test for sugar in urine—nitric acid—is not of any value.

*A. J. T.*—The disease is produced principally by fear. Any respectable practitioner could treat the case. Avoid the quacks.

*Mr. Robert Hamilton* is thanked for his obliging communication.

### THE CASE OF CANCEROUS TUMOUR AT TUNBRIDGE WELLS.

*To the Editor of* THE LANCET.

SIR,—So much controversy having taken place, through the medium of your journal, between the different medical gentlemen who visited my late son-in-law, Mr. Condell, I am induced to make the following statement:—

In March last, Mr. Condell called upon me in town, and consulted me upon what he called an annoying affection of the bowels, such as occasioned looseness or diarrhœa, attended with tenesmus, which had troubled him at times for some months past. He did not in other respects feel indisposed. In answer to questions I then put to him, I was led to expect the existence of stricture in the rectum, and I consequently persuaded him to allow me to make an examination. Upon passing my finger into the rectum as high up as I could reach, I could not discover any stricture. I recommended him to take some blue pill, combined with opium, at bed-time, and an aperient draught on the following morning, and to repeat the medicine as occasion required.

On the 6th of April, I received a telegraphic message, summoning me to Tunbridge Wells. On my arrival there, I found Mr. Condell labouring under constipation and symptoms of obstruction in the bowels. He complained of great nausea, so much so that he apprehended his stomach would not retain any aperient. However, I persuaded him to take a dose of the compound decoction of aloes, and I gave him at intervals five doses of this preparation, all of which his stomach retained, and ultimately his bowels were fully relieved. I then left him, and returned to London. He continued to take the compound decoction of aloes at intervals for some days afterwards, with satisfactory results, until the beginning of MAY. On the 9th of this month I was again summoned by telegram to visit Mr. Condell. When I reached Tunbridge Wells, I found him suffering from the same symptoms as before, and I became fully satisfied that permanent stricture existed in the upper part of the rectum, or in the colon, or in both. I administered the aloetic mixture, which, with the aid of an enema, relieved him, but not to the same extent as on the former occasion.

I was called to town on important business, but returned to Tunbridge Wells on the 16th, as on that day I received another telegram, calling upon me to return immediately. From that time I remained with Mr. Condell until he died.

On the 17th, I think it was, I sent to London for some soft wax bougies of different sizes. When they arrived, Mr. Trustram asked me to allow him to introduce one of the smallest of them. This he did with great caution, and by gentle insinuation he passed it through the rectum into the sigmoid flexure of the colon, which gave no pain. Two or three days afterwards Mr. Solly passed another bougie of rather larger size, which I understood did not cause the slightest pain.

It appears to me quite ridiculous that Dr. Bell should have considered Mr. Condell his patient exclusively, when he knew that I had been sent for from town to attend him. Indeed on this occasion Mr. Condell requested me to tell Dr. Bell that his attendance was no longer required, which request I now regret that I did not comply with. It was natural enough that Mr. Condell should place himself under my care, taking into consideration that he had been my pupil, and had resided with me many years, during which time he had witnessed my success in practice. I enjoyed the good opinion of the heads of our profession for upwards of twenty years, during which time I was in active and extensive practice at the West-end. I mention these facts merely to prove that I did not depend on Dr. Bell for his superior judgment and experience in this unfortunate case. I told Dr. Bell that I was fully persuaded that Mr. Condell's disease was not to be controlled by medical aid.

As to Mr. Solly, he was an old friend of poor Mr. Condell's, who had the highest opinion of Mr. Solly's professional ability. Mr. Trustram was an old friend of mine, and had been a pupil of my father's, and I entertained a high opinion of his professional talents. Was it not natural, under the above-mentioned circumstances, that Mr. Solly should have been requested to visit Mr. Condell? Was it not also natural that I should request Mr. Trustram to visit my son-in-law? Dr. Bell was comparatively a stranger to me; but as he had kindly visited Mr. Condell prior to my being sent for to attend him, I did not wish to act uncourteously by telling him that I did not require his assistance. How has he behaved to me? Positively he has endeavoured to make me appear as a nonentity for my civility towards him. Dr. Bell has made a great mistake in stating that his diagnosis in this case was correct; for he denied the existence of stricture several times, and, moreover, said that the case was purely medical, and not surgical.

Your obedient servant,

Bennett-street, Sept. 1863. ROBERT HICKS.

*To the Editor of* THE LANCET.

SIR,—I have been unable from professional engagements to give earlier attention to a charge of unprofessional conduct recently made against me by Dr. Bell in your columns. Even now I should decline so humiliating a task, if truth and justice to others did not demand its performance. The simple facts of the case appear to me sufficient refutation of the misstatements with which it has been surrounded. They are in themselves of a most interesting nature, and calculated to throw light on an operation too much neglected.

On May 12th, the day after Mr. Solly's visit, I saw Mr. Condell at his own particular request. Then I informed Drs. Bell and Wardell that I had learned Mr. Solly's opinion from Mr. Hicks and Mr. Andrew. It was to the effect that the patient was suffering from mechanical obstruction of the bowel, which would be relieved only by operation, when justifiable on other grounds. Those gentlemen considered the symptoms due to acute and diffused peritonitis. It was impossible to learn anything from abdominal examination, on account of the tympanitis; so I contented myself with acting on their views, hoping to find the symptoms, which were said to be on the decline, improved on the morrow. On this visit I was shown a piece of fæces, the size of a small thumb, covered with fresh green mucus, which had been passed that morning. On being pressed for an opinion as to the advisableness of operation, I observed that from their account of the improvement in the patient, and from the fact of feculent matter having occasionally passed, it was not immediately necessary.

On May 15th, a message was brought from the patient, requesting me to visit him at once, and alone. This I refused to do, and sent on the messenger to Dr. Bell, stating the time I should be there, with a strong injunction to be very careful not to wound his sensibilities, which I had begun to see were preternaturally acute.

At the following visit, the abdomen was more distended than I ever remember to have seen it, presenting a rounded central prominence. There was but little vomiting, and that only of the food; the aspect of the countenance was good; pulse 80, with entire absence of all febrile excitement. The patient told me that, though he was conscious of mischief in the lower bowel from the pain caused by injections, he had a strong impression there was disease at the ileo-colic junction, adding that the distress from abdominal tension had been so great at times during the last fortnight, that he could have rolled on the floor for relief. On rectal examination, I could find no disease within reach of the finger; but on passing a small bougie, I found it enter a soft resisting mass, and so convinced myself that the gut was considerably obstructed at a point about six inches up. I came to the conclusion that the obstruction, though it had been for some time developing, had begun to exert serious influence only during the present rather sudden attack, which had been mistaken for peritonitis.

Mr. Solly saw the patient again on the 25th. I expressed my opinion as to the state of the rectum, and, after careful examination, he was convinced that an operation was the only way of relieving the disease. The bougie on this occasion brought down a thin film of blood and mucus, which, under the microscope, was found to contain cancer cells—a fact which was unfortunately not known till after the consultation with Mr. Fergusson on the 29th. Neither this gentleman nor Dr. Ferguson could see the desirableness of an operation, and accordingly the patient did as all do who are labouring under mechanical obstruction, growing gradually worse, and ultimately sinking rather more rapidly than was expected.

The body, on post-mortem examination, was not emaciated; the abdomen much distended, and the skin tense. I introduced a trocar at the seat of Amussat's operation; its point was found in the intestine two inches above the seat of disease. The distended gut shot forth from the abdominal incision to the extent of a foot or more. It was perfectly healthy, glistening, not vascular, and showing no sign whatever of peritonitis. The colon contained some feculent matter of moderate amount. The sigmoid flexure was greatly enlarged, and had evidently been the seat of an impaction. A small perforation was discovered, from which about half an ounce of fæces had escaped. The upper third of the rectum was occupied by a large fungoid mass, growing from the submucous tissue, of an irregular lobulated shape, the lobes fitting into one another internally like cogs of a wheel, and thus obstructing the calibre.

No unprejudiced person, after reading this account, can for a moment doubt that it was the duty of a medical man to offer his patient the chance of a year or two of life, which Amussat's operation might have given him. In this case I cannot but feel that had Mr. Solly's opinion, formed in the earlier stages of the disease, been appreciated and acted on, the patient would in all probability have now been alive. His death was brought about, not by an advanced condition of malignant disease, but by tympanitis and perforation. The late period at which I was myself called in to the case prevented my urging the operation personally; but I felt it was the only means of prolonging the patient's life, and frequently expressed myself to this effect.

I am, Sir, your obedient servant,

Tunbridge Wells, Sept. 1863. CHARLES TRUSTRAM, M.R.C.S.

*To the Editor of* THE LANCET.

SIR,—Observing in your journal of August 15th a letter from Dr. Wardell, of this town, on the case of my late friend, Mr. Condell, I write at once to say that his account and mine are quite opposed as to what I really did say on the occasion referred to; and that when I called upon him as stated, it was to fix a consultation with Mr. Solly to *decide as to the propriety of operating.* With regard to the instrument, I was directed by Mr. Solly to procure it in case it should be required, and particularly as Mr. Solly's time in Tunbridge Wells was very limited; and *Dr. Wardell went himself to the infirmary for it*—a fact which, had the operation been performed, and successfully effected, might have been claimed by Dr. Wardell and his friends as showing that he *was not so opposed to the operation as he now represents.*

I write this in answer to the unfounded charge of rashness made against Mr. Solly.

I am, Sir, your obedient servant,

Tunbridge Wells, August 21st, 1863. RICHARD ANDREW.

*** This correspondence must now terminate. We understand that it is Mr. Solly's intention to bring the details of this case, which is one of much surgical interest, before the Medico-Chirurgical Society.—ED. L.

*T. T.*—According to an American contemporary (August 22nd), the great increase of mortality in New York during the past few weeks was exciting public alarm. The number of deaths was at one period double that usually reported. It is said that New York is annually becoming less and less habitable by children during the summer months. The long-accumulating heaps of garbage undergo rapid putrefaction at this season, and saturate the atmosphere with their poisonous emanations. Habits of intemperance are stated to be increasing rapidly amongst the people.

*An Irish Practitioner* must append his name and address to his communication.

*Homo.*—It will depend upon the time he entered the profession.

THE STUDY OF CHOLERA BY MILITARY SURGEONS.

*To the Editor of* THE LANCET.

SIR,—As Dr. Macloughlin (or the Federal doctor) still expects all professional men to hold their peace when he says "Boo!" I will merely answer a few remarks in his last long letter, which leaves us in as complete ignorance as we were before regarding the study of cholera. On looking over some papers, I find an official document forwarded by Dr. Babington and the Epidemiological Society, through the Director-General, thanking me for the able manner in which I had dealt with the series of questions emanating from them on the subject of cholera, and I believe that at least one other medical officer, Dr. G. E. Hardie, had the same letter. Am I to suppose that the Society in question is an unscientific body? Again, Dr. Gibson did not wish to infer that there was no necessity for studying the pathology of cholera, but that nothing more could be done at present by the Army Medical Department; and the mixed Commission in India, (composed of colonels, captains, &c.,) in declining to enter into the pathology of cholera, but confining itself to hygienic inquiries, I venture to think, showed its sound sense. It's regretting that cholera had not been studied is merely a conclusion arrived at by the Federal doctor.

Now, Sir, when a friend of mine stated that he had seen many cases of typhoid fever in Bombay without the characteristic spot, Professor Jenner did not tell him he was wrong, or that he said what was untrue; neither does Professor Maclean contradict a man with less experience than himself because he may have a different opinion. But then these gentlemen are not Federals. Oh, no! they are rather Confederates, as we all should be.

Finally, after being exposed to four epidemics, and having suffered once from the disease in a mild form, I cannot help thinking that the Federal doctor mistakes effect for cause, and puts it down as a disease of stomach and bowels; striking at the secondary, not the primary evil; calling also the running off of the serum, diarrhœa. I venture to recommend that if he has a nostrum, he should ponder no longer over the ingratitude of Dr. Gibson and the Army Medical Department, but go to India, where he may become a great *Hakeem Sahib*; or if he proceed a little further (to China), he may possibly become a Mandarin with a blue button.

I have the honour to be, Sir, yours obediently,
H. B. FRANKLYN,
September, 1863. Surgeon 1st Battalion 10th Foot.

*** No more letters can be inserted on this subject.

*Thirteen Pence Halfpenny*, (Kentish-town.)—Mr. Emerson's example cannot be recommended as worthy of being followed. The placards are certainly not consistent with professional propriety.

*Dr. R. C. Shettle.*—Two more papers.

*Medicus.*—The article on "Consumption" is not fitted for our pages.

TREATMENT OF DIPHTHERIA.

*To the Editor of* THE LANCET.

SIR,—In your impression of August 29th appears a letter from Dr. Jones, who states that sixty years ago he saw cases of diphtheria treated by salines, &c. He also says he does not remember having lost a single case.

I, for one, beg most respectfully to doubt the truth of this assertion. In his account of the train of symptoms, he has certainly omitted some of the most prominent ones. His treatment is ridiculous for such a formidable disease. I think nearly all the profession agree that stimulants administered early constitutes the principal part of the treatment. Dr. Jones, moreover, does not name the different preparations containing chlorine. I am sure, after a very great experience in the treatment of this complaint, chlorine in some form or other, both internally and as gargles, is the sheet-anchor in the shape of medicines.

I am, Sir, yours, &c.,
September, 1863. M.D.

*Student.*—Dr. Poggiale's paper will be found in the *Gazette Médicale*. His main conclusions are—1st, that sulphurous acid and the alkaline and earthy sulphites are capable of arresting the fermentation process; 2nd, that it is quite possible to neutralize the morbid ferments in the blood by certain doses of some of these agents—the sulphite of soda, for example—not incompatible with the health of that fluid, and by which we may treat successfully maladies having such an origin.

IF *A Constant Reader* will send us his name and address, he shall receive a private note.

PREGNANCY IN ADVANCED AGE.

*To the Editor of* THE LANCET.

SIR,—In reply to "Inquirer," I can state that I have attended in their confinements *several* women whose ages were 50.

I well recollect a case occurring in my father's practice in 1839, where a woman became a widow at 49 years of age. Shortly afterwards she married her second husband, and within twelve months of this time gave birth to her *first* child.

These cases belong to the working classes. But I know of two others, where gentlewomen became mothers at 50: one with her *first* child, the other with her eighth. I can say nothing of how they menstruated; but I know of a virgin in whom the catamenia appeared *regularly* and undiminished up to and at the age of 60.

I am, Sir, your obedient servant,
Carrhills, Durham, Sept. 1863. R. H. S. CARPENTER, L.R.C.P. Lond.

*Questor.*—The medical witness gives his evidence upon oath. No Coroner or Coroner's jury of average intellect would desire to witness a public exhibition of such experiments. It must be remembered, however, that it has been well observed that jurors are not necessarily *con-jurors*.

*Inquirer.*—An inquest is not held under ordinary circumstances; but registration of the death is necessary.

TREATMENT OF SPASMODIC ASTHMA.

*To the Editor of* THE LANCET.

SIR,—Will some of your numerous readers inform me what is the best treatment for spasmodic asthma. I am a young medical man, and in the discharge of my professional duties I unfortunately got an attack of acute bronchitis, which left an emphysematous condition of both lungs, the result of which is, I am a martyr to asthma. I have an attack about twice a week; in fact, I am no sooner rid of one than another begins, so that my life is a source of misery to me. I have tried all kinds of medicines, with but little relief. I have visited nearly every part of Great Britain, but with no benefit. I have been advised to go abroad; but as the only difference I find between warm and cold weather is that the attacks are a little shorter, I do not anticipate much benefit from this step.

Can it be possible that medicine, which has done so much for other diseases, can do nothing for one of the most distressing complaints that man is heir to?

Any information on the subject will greatly oblige,
Kensington, Sept. 1863. A PROFESSIONAL BROTHER

*Casualtus.*—The absence of that which is commonly considered as a proof of purity cannot be taken as conclusive evidence upon the point. There are so many causes of the destruction of that test, that it would be most unjust, as well as most unwise, to place dependance upon it.

A CURIOUS CASE.

*To the Editor of* THE LANCET.

SIR,—Is "Chirurgus" quite sure the young lady never thrust up a bit of slate pencil, which still remains in the nostril? And is he quite satisfied that no carious tooth is a source of irritation?

Yours, &c.,
September, 1863. W. A. R.

*G. S. H.*—If our correspondent will communicate with Mr. Napper, of Cranley, near Guildford, there is little doubt that he will afford every information on the subject.

*One in Perplexity.*—He can do so with propriety, and probably without any question of its legality.

PREPARATION OF LIQUOR CHLORINÆ.

*To the Editor of* THE LANCET.

SIR,—In answer to your correspondent, "J. C. B. S. W.," I beg to inform him that he will find the following mode of preparing the chlorine mixture a very good one:—Put four grains of chlorate of potash, well pulverized, in an eight-ounce bottle; then add half a drachm of hydrochloric acid; cork the bottle well, and let it remain for about five minutes; then add gradually eight ounces of water, shaking the bottle constantly until the whole of the water be added. Dose, from an ounce to a drachm.

Yours obediently,
Warrington, Sept. 1863. P. L. SADLER, M.R.C.S.

POWER OF L.F.P.S.G.S TO RECOVER FEES.

*To the Editor of* THE LANCET.

SIR,—"A Correspondent" is informed with much pleasure that the undersigned, when only L.F.P.S.G., obtained judgment in some hundreds of cases both in superior courts and county courts, and still continues to sue and obtain judgment in all cases legally proved. The Register alone guides the judge.

Yours, &c.,
September, 1863. L.R.C.P., L.F.P.S.G., and L.S.A.

ERRATUM.—In Dr. Wolfe's reply to "Chirurgus" in our last issue, page 296, read—"Calomel, half a drachm, *or* red precipitate."

COMMUNICATIONS, LETTERS, &c., have been received from—Dr. Waters, Liverpool; Dr. Malins, Birmingham; Mr. Mercer, Wadhurst, (with enclosure;) Mr. Davies, (with enclosure;) Dr. W. B. Herapath; Mr. W. F. Giles; Mr. Green, (with enclosure;) Mr. Leach; Mr. Brown; Dr. Pechey, (with enclosure;) Dr. Bellyse, Nantwich; Dr. Williamson; Dr. Buckenham; Messrs. Barker and Jackson; Mr. Lloyd, Kelvedon, (with enclosure;) Dr. Boyle; Dr. Shettle; Mr. Leary, (with enclosure;) Mr. Sharpe, Hull, (with enclosure;) Mr. Meadows, Great Yarmouth; Mr. S. Gourling, Glasgow, (with enclosure;) Dr. Mackintosh, Downham Market; Dr. Willmott; Dr. O'Reilly; Mr. Hyde, Bristol, (with enclosure;) Dr. Carpenter, Durham; Mr. Reeves; Mr. Renton; Mr. Blake, Salisbury; Mr. Fry, Thanted; Mr. Charteris; Mr. Franklin, St. Leonards; Mr. Murray; Mr. Sadler, Warrington; Dr. Conolly; Mr. Arkwright; Dr. Munroe, Hull, (with enclosure;) Dr. Aldis; Mr. Jennings, (with enclosure;) Mrs. Baines; Mr. Dunlop, Ballintoy; Mr. J. Black, (with enclosure;) Mr. Wilson, Carnmonly; Dr. Harland, Mayfield; Mr. Walker, Sheffield, (with enclosure;) Mr. Lowndes; Mr. T. Nunneley, Leeds; Mr. Green, Brixham; Mr. Daubeny, Bath; Mr. Griffin, Southampton, (with enclosure;) Mr. Kempton; Dr. Richardson; Dr. J. M'Grigor Croft; Mr. Ellis, Newcastle; Mr. Biddle, Leeds; Mr. S. Haughton, Dublin; Mr. Barrett, Pewsey, (with enclosure;) Dr. Bullmore, (with enclosure;) Mr. Callaway, Algiers; Mr. Hollings, Wakefield, (with enclosure;) Mr. J. Coppin, Ripon; Army Medical Department; J. G. A., (with enclosure;) Zeta, (with enclosure;) Inquirer; Alpha, (with enclosure;) One that Looks for Justice; A Medical Officer; An Old Surgeon; A Professional Brother; M.D.; G. S. H.; &c. &c.